

Are Parents Investing Less in Children? Trends in Mothers' and Fathers' Time with Children¹

Liana C. Sayer
Ohio State University

Suzanne M. Bianchi and John P. Robinson
University of Maryland

In this study, time diary data are used to assess trends in mothers' and fathers' child care time from the mid-1960s to the late 1990s. Contrary to conventional wisdom, the results indicate that both mothers and fathers report spending greater amounts of time in child care activities in the late 1990s than in the "family-oriented" 1960s. For mothers, there was a 1965–75 decline in routine child care time and then a 1975–98 rebound along with a steady increase in time doing more developmental activities. For 1998 fathers report increased participation in routine child care as well as in more "fun" activities. The ratio of married mothers' to married fathers' time in child care declined in all primary child care activities. These results suggest that parents have undergone a behavioral change that has more than countered family change that might otherwise have reduced time with children.

The assumption that changes in American families have led to decreased parental investments in child rearing over the past 40 years is ubiquitous. For example, a recent report issued by the Council of Economic Advisors

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states that since 1969 the time American parents spend with their children has declined by 22 hours per week (Council of Economic Advisors 1999). Unease that children are getting shortchanged by altered parental time allocations engendered by divorce and increased maternal employment also features prominently in recent presidential addresses to the American Sociological Association (Coleman 1993) and the Population Association of America (Bumpass 1990; Presser 1989; Preston 1984; Waite 1995).

How changes in the family have affected parental time with children is a vital question because of the connection between parental time investments in children and children's well-being (McLanahan and Sandefur 1994; Nock and Kingston 1988; Pleck 1997). However, the supposition that changes in the family have necessarily decreased parental time spent caring for children may be unfounded. First of all, the literature lacks accurate assessments of trends in parental care of children because few studies have used direct measures of child care time, instead relying on "residual" estimates, such as how much time parents spend working and sleeping, with the remaining time assumed to be available for children. For example, the estimate of a 22-hour decline between 1969 and 1999 in parental time caring for children was arrived at by subtracting increased employment hours of parents from total waking hours (Council of Economic Advisors 1999). The problem with residual estimates of time investments in children is that increased work hours do not translate, hour for hour, into less time with children.

For the dramatic decline in parental time at home that has accompanied the rapid increase in mothers' labor force participation to translate into equally dramatic reductions in actual time invested in children, one or more of three conditions would have to be met (Bianchi 2000). First, children would have to be available when parents were not working—something that is highly unlikely once children reach school age and are required to spend a sizable number of hours away from home during the school year. Second, parents would have to be investing in their children during most of the hours when they were not employed for there to be dramatic differences between employed and nonemployed parents. This, too, seems unlikely. For example, Nock and Kingston's (1988) investigation of parental time with children in the early 1980s showed that employed mothers spent less time in activities with children but even "stay-at-home" mothers spent much of their day not directly engaged in child care activities. Third, for increased maternal work hours to greatly affect time with children, these additional hours would all need to come during periods in the life course when parents would otherwise be caring for their children. Yet, parents can maximize their availability to children by altering work hours to coincide with children's available hours. Even by 1998, the majority (54%) of married women in the most intense child-

rearing ages (ages 25–54 with preschool-age children in the home) did not work full-time, year-round (Cohen and Bianchi 1999). This raises the possibility that parents, especially mothers, continue to try to balance paid work and child rearing by curtailing hours of work when their children are very young or when work hours conflict with periods of the day or year when their school-age children are at home.

In addition, although it is possible that increased maternal employment has reduced the time mothers spend rearing their own children, there have been other changes in the family that may counter negative compositional trends or where the outcome is more ambiguous. For example, families are smaller and parents are older and better educated than they were three decades ago. The effects of trends in family size, parental education, and parental age on the time parents spend with their children need to be considered, in addition to trends in maternal employment.

A second reason the assumption that changes in the family have necessarily decreased parental time with children may be incorrect is that parental behavior may also have changed over recent decades. Parenting practices are affected not only by compositional characteristics but also by cultural norms and values that imbue notions of appropriate parental behavior. Historical change in parental time with children likely results from shifts in behavior as well as demographic factors (Gershuny and Robinson 1988). Much of the literature on parental time with children has focused narrowly on the potential negative effects of family compositional change, ignoring the possibility that parents may have altered behavior to preserve time with children. Ethnographic studies of parenting practices suggest that parental behavior has changed with the emergence of norms of “intensive mothering” and “involved fathering” in recent decades (Coltrane 1996; Deutsch 1999; Hays 1996). LaRossa (1988) asserts that paternal behavior has lagged behind the substantial changes in the “culture of fatherhood,” but this evaluation is based on fathers’ behavior in the early 1980s, leaving open the possibility of continued upward movement in fathers’ child care time. Although research indicates that mothers continue to spend more time in child care than fathers do, we do not know how the relative time investments of mothers and fathers in children have changed historically. Whether or not fathers’ time with children has changed through the 1990s and how any such change has affected the ratio of mothers’ to fathers’ child care time has yet to be addressed in the literature.

The best data for assessing trends in parental time with children and determining whether change stems from compositional or behavioral shifts are from time diary studies (Gershuny and Robinson 1988). A number of methodological studies have established the accuracy and reliability of the time diary method. Studies that have compared “yesterday” and

“tomorrow” time diaries, telephone and in-person interviews, and various formats of the diary itself all produce high correlations between aggregate time use estimates (Juster 1985; Robinson and Godbey 1999). Additionally, comparisons of time diary reports with reports from “beeper” studies (in which respondents jot down their current activity in response to an electronic paging device) provide evidence for the basic validity of time diary data (Robinson 1985).

The limited research that has been done with time diary data in the United States suggests that mothers’ time with children did not decline between 1920 and the mid-1980s (Bryant and Zick 1996; Gershuny and Robinson 1988). However, no comprehensive study using national U.S. data assesses trends in mothers’ and fathers’ child care time beyond the mid-1980s or examines the relative contributions of compositional versus behavioral factors in explaining trends. Recent research uses two cross-sectional children’s time diaries to examine the issue from the perspective of *children’s* time with parents; the findings indicate that time with married parents has increased for children ages 3–12 and suggest that compositional factors play only a small role in explaining historical change (Sandberg and Hofferth 2001). However, this research compares trends in preadolescent children’s time with parents only from the early 1980s through the late 1990s. Yet, many of the changes that have occurred in families, such as decreases in family size and increases in maternal employment, parental education, and marital disruption, were well under way by the early 1980s. In contrast, time diary data from the 1960s, such as that used in this analysis, reflect parental investments in children during the baby-boom, postwar, presexual revolution period and thus provide a more ideologically important baseline for assessing change. The “Ozzie and Harriet” family of the 1950s and 1960s remains the implicit backdrop against which many contemporary family changes are assessed.

In this study, we use time diary data from four national surveys of U.S. adults conducted in 1965, 1975, 1985, and 1998 to assess the relative contribution of compositional and behavioral factors in explaining change in mothers’ and fathers’ child care time. The data from the 1960s are the earliest time point for which national time diary data are available for the United States, while the data from the late 1990s are the first collected since the mid-1980s that directly measure parental investment in child care activities and in all other activities. We use these data to determine whether the time mothers and fathers spend in child care is declining, as some fear, or whether the opposite is occurring. Are maternal and paternal care of children trending in the same direction, or has mothers’ time with children fallen as fathers’ time has risen? How do compositional changes that have occurred in families between the mid-1960s and the end of the 1990s affect the trends we observe? Are changes solely a function of

compositional changes in the family or has the propensity of parents to spend time with their children changed significantly since the 1960s?

We begin with a review of compositional and behavioral changes in the family that may have affected, both positively and negatively, the amount of time parents spend caring for children. We then describe our data and measures and use them to provide an assessment of trends in mothers' and fathers' time with children. We employ a variety of methods to assess the effects of compositional and behavioral factors on changes in parental time with children, including comparison of simple averages, tobit regression, and decomposition. This study complements research using children's diaries (Sandberg and Hofferth 2001), provides a longer historical perspective, and carefully analyzes compositional and behavioral factors that have contributed to changes in parental time with children in the latter half of the 20th century.

COMPOSITIONAL FACTORS ASSOCIATED WITH PARENTS' CHILD CARE TIME

A number of changes in the family are likely to have affected parental care of children. During the past three decades, families and children have become increasingly likely to experience parental divorce or nonmarriage. Maternal employment, especially among married mothers of young children, has increased dramatically. At the same time, family size has decreased as parenting is delayed until older ages and the average level of education of parents has increased. Below we discuss how each of these changes might be thought to be related to mothers' and fathers' time with children.

More single parenting.—Children in the late 1990s were far more likely to reside with only one parent, usually their mother, than in the mid-1960s at the end of the baby boom. In addition, during the 1980s and 1990s, single mothers became ever more likely to be a never married rather than divorced (or widowed) mother. Children in single parent families typically have much less access to their fathers than children in two parent families (McLanahan and Sandefur 1994). Additionally, children living with only one parent also spend less time with their custodial parent (Robinson 1989, 1994; Sandberg and Hofferth 2001). Hence, if the increases in marital disruption and nonmarriage had been the only changes to characterize children's families in the past three decades, we would expect parental time invested in children to have decreased between 1965 and 1998.

Increased maternal employment.—In the late 1990s, as compared with the 1960s, more children lived in households where all available parents

in the household were in the paid labor force. Women, particularly married mothers, have dramatically increased their participation in paid work away from the home in the past few decades (Cohen and Bianchi 1999). Given the rise in married mothers' employment rates, the combined labor market hours of married couple households have increased (Clarkberg and Moen 1999; Jacobs and Gerson 2001). Single mothers tend to work more hours than married mothers, though this gap converged by the mid-1990s (Cohen and Bianchi 1999), so the increase in single parenting has tended to raise women's employment rates. All else being equal, the increase in maternal employment should have resulted in a decrease in time caring for and doing things with children since employment and hours of market work are negatively associated with mothers' time with children (Aldous et al. 1998; Coverman 1985; Coverman and Sheley 1986; Marsiglio 1991; Zick and Bryant 1996). Although employed mothers' time in child care activities increased from the 1960s to the 1980s, they continued to spend less time in child care activities than nonemployed mothers (Bryant and Zick 1996; Gershuny and Robinson 1988; Nock and Kingston 1988).

The increase in mothers' employment has not been met by an equivalent increase in fathers' investment in child care activities. All studies of child care time report that mothers continue to invest considerably more time in child care tasks than fathers do (Ahmeduzzaman and Roopnarine 1992; Aldous et al. 1998; Bryant and Zick 1996; Hofferth and Sandberg 2001a). That is, despite increases in maternal employment and more similarity in labor force participation of mothers and fathers, married parents continue to specialize, with mothers doing more of the nonmarket work of the family and fathers doing more of the market work. Indeed, decisions about time allocations to market and nonmarket activities are jointly determined for individuals and are negotiated with spouses in married couples.

In the past, fathers with employed wives were found not to spend more time in child care activities, as compared to fathers with nonemployed wives (Bryant and Zick 1996; Nock and Kingston 1988; Pleck 1997). However, a recent analysis suggests that fathers' time with children may have increased more for those married to employed mothers than for those married to nonemployed mothers (Sandberg and Hofferth 2001). This could result if gender specialization in the home were undergoing reevaluation in response to women's increased labor force participation. The effect of fathers' own employment on their time in child care is mixed, but in general fathers' employment appears to depress their child care time. Studies have found either a negative association (Coverman and Sheley 1986; Ishii-Kuntz and Coltrane 1992; Yeung et al. 2001) or no association between men's employment and their child care time (Pleck 1983).

Declining family size and older parents.—Since the baby boom of the

1950s and early 1960s, fertility has declined and families have become smaller. Also, as childbearing is delayed, parents are older, on average, at the birth of their (fewer) children. The effect of these trends on parents' child care time is not clear. Smaller families should mean that less adult time is invested in children in total. However, the per child investment might actually increase because time with children may be spread across fewer children (Bryant and Zick 1996). Past research indicates that the number and ages of children are more important determinants of parents' time spent in child care activities than parental demographic or socioeconomic characteristics—the younger the child is, or the more children there are, the more time both parents spend in child care activities (Coverman and Sheley 1986; Pleck 1997; Sandberg and Hofferth 2001; Zick and Bryant 1996).

Parents who delay childbearing are more likely to have chosen to become parents rather than become a parent through an unintended pregnancy and hence might be posited to be more predisposed toward investing time in parenting. Coltrane (1996) reports that women who become mothers relatively late appear to have “selected” husbands partly on the basis of their desire to be involved fathers. On the other hand, women who desire children and face constraints of the “biological clock” may “settle” for relatively uninvolved fathers. Older parents will typically also have more competing demands on their time, especially from paid work. Empirical research is mixed on the effect of parent's age on time spent in child care activities for both mothers and fathers, with positive association reported by some studies (Coltrane 1989; Cooney et al. 1993; Coverman and Sheley 1986; Zick and Bryant 1996) and no association reported in other studies (Pleck 1997; Sandberg and Hofferth 2001).

Increased parental education.—Early time diary research suggested that more highly educated parents, in particular college-educated mothers, invested more time and did more enriching activities with their children than less educated parents (Hill and Stafford 1974, 1985; Leibowitz 1974, 1977). Assuming that this continues to be the case, the ratcheting up of average levels of education that has occurred over the past three decades (see Mare 1995) should be producing parents with a higher likelihood of investing “quality” time in their children. Unlike predictions of less time available for children that accompany increased maternal employment and more single parenting, or the ambiguous predictions that accompany changes in family size and the average age of parents, changes in the educational attainment of parents should be increasing parental time with children and perhaps also enhancing the quality of the activities that parents do with children. Rising levels of affluence that attend increased education also provide the financial means for enriching the experiences (vacations, lessons, outings) of children. For mothers, one study suggests

that more highly educated mothers continue to invest more time in children (Zick and Bryant 1996), but a more recent study reports no association between maternal education and time with children (Sandberg and Hofferth 2001). Research also indicates that higher levels of maternal education weaken the negative relationship between age of children and mothers' time with children (Hill 1985) and increase the amount of time children spend studying and reading (Bianchi and Robinson 1997; Hofferth and Sandberg 2001a). For fathers, the effect of education appears to vary by the age of the child and by the type of activity engaged in with children. Paternal education has no effect on direct physical care of preschool age children (Aldous et al. 1998; Marsiglio 1991), but it does increase the time fathers spend playing, reading, or going on outings with their preschool age children (Cooney et al. 1993; Fields et al. 2001). For school-age children, recent research indicates that paternal education is positively related to children's time with their father (Aldous et al. 1998; Marsiglio 1991; Yeung et al. 2001).

BEHAVIORAL FACTORS ASSOCIATED WITH PARENTS' CHILD CARE TIME

Parenting practices change over time in response to transforming institutions and evolving cultural norms and attitudes (Arendell 2001; Pleck and Pleck 1997). The literature suggests three reasons why mothers and fathers might be investing more time in their children today, as compared with their 1960s counterparts: the increasingly voluntary nature of parenthood, burgeoning parental concern over the safety of children, and pervasive changes in the cultural context of parenthood.

Voluntary nature of parenthood.—The widespread availability of contraceptives, such as the pill, coupled with lessened normative expectations that assuming the parental role is an integral aspect of adulthood and marriage, suggest that women and men who decide to become parents may increasingly be selected from those who have greater motivation and desire to invest heavily in children. In Western industrialized nations, values that emphasized family sacrifice and devotion have given way to those underscoring the importance of individual freedom and personal development (Lesthaeghe 1995; van de Kaa 1987). Individuals who might once have chafed “under the yoke of responsible parenthood” (Preston 1986, p. 184) today have the technological and normative support required to opt out of childbearing. Little research has been done on voluntary childlessness, but one study indicates that individuals who express concern about children restricting their social activities or free time are less likely to become parents as compared to individuals who do not express such

concerns (Heaton et al. 1999). A recent qualitative study of 25 white voluntarily childless women suggests that women's desires to pursue career opportunities, personal interests, and/or maintain personal freedom motivated their decision to forgo motherhood (Gillespie 2003). In addition, parental involvement may be more voluntary among men than women, given reduced normative pressure on men to claim paternity for children born outside of marriage and/or continue to invest in children following a divorce (Furstenberg 1988). Mothers and fathers (at least married fathers) today may be more child oriented than parents in earlier decades and hence may increasingly structure their lives to spend as much time as possible with their children.

Concerns over children's safety.—The erosion of community bonds within neighborhoods, heightened perceptions of crime in some settings, and the expansion in children's extracurricular activities along with the increasing distances children must travel to participate in these activities all appear to have increased the level of parental supervision of children's activities. Warr and Ellison (2000) report that over 80% of mothers and fathers express fears about the safety of their children. Research has shown that such fears affect parental decisions about children's activities (Best 1990; Kurz 2002). The increase in children's participation in extracurricular activities since the early 1980s may be fueled in part by parents' concern for children's safety (Hofferth and Sandberg 2001a; Kurz 2000, 2002). For example, the once common practice of unsupervised neighborhood play has been replaced by scheduled play dates, parents driving their children to soccer, Little League, or other activities and then remaining to ferry the children home. As a result, parents today may spend considerably more of their evening and weekend time supervising children as compared to parents in the mid-1960s.

Changing cultural contexts of parenting and childhood.—Finally, the sweeping structural changes that have occurred over past decades in American families have been accompanied by changes in the cultural context of parenting and childhood (Arendell 2001; Hays 1996; Stevens 2001; Zelizer 1985). Ideals of good mothering have broadened to include wage earning, but mothers have not been released from normative expectations that they will devote substantial time and energy to hands-on caregiving (Garey 1999; Riggs 1997). Indeed, as the value of children has switched from being economically to emotionally based (Zelizer 1985), the amount of time necessary to produce a "good" childhood has ratcheted up tremendously (Arendell 2001; Hays 1996). Mothers are expected to be experts in the needs and desires of their children, not to mention the latest child development methods, to cultivate and supervise all aspects of their children's development and well-being, and to vigilantly protect children's innocence—a time-intensive prescription.

A particularly labor-intensive form of parental (usually maternal) investment, home schooling, is on the rise. One ethnographic study connects the home-schooling movement in the United States to the belief that the formal educational system squelches the unique nature of children and retards innate intellectual curiosity (Stevens 2001). Home schooling tailors education to children's individual needs and interests through huge investments of parental time: "Love is spelled T-I-M-E" (Stevens 2001, p. 43).

Expectations that fathers too will invest considerable time in children have also grown. The 1970s saw the emergence of an ideal of involved fatherhood, in particular norms that fathers become more intimately involved in the daily care of their children (Coltrane 1996; Pleck and Pleck 1997). Past research suggested that the culture of fatherhood had altered considerably more than had fathers' behavior (LaRossa 1988). However, Thorpe and Daly (1999), in a study of 15 Canadian dual-earner families, report that fathers indicate the desire and felt obligation to spend as much time with children as possible. Fathers are also as likely as mothers to espouse the belief that time is the "ultimate parental resource," to which children have "unlimited rights." In addition, a recent study of 18 couples that included "male breadwinner" families reports that fathers expected to be coparents when at home and "did not personally feel they ha[d] a choice not to be fully involved" (Dienhart 2001). Clearly, to meet today's standards of appropriate parental behavior, both mothers and fathers must allocate substantial amounts of time to the care of their children. Again, this suggests that the gender-specialized division of labor in the home is undergoing reassessment, with greater pressures on fathers to be actively engaged in caregiving as well as breadwinning.

In sum, though at first blush the dramatic changes that we first think of as affecting the family—more marital disruption and more maternal employment—would seem to portend lowered investment in children, the picture is far more complicated, even when considering compositional change alone. Findings from other industrialized countries paint a picture of increased, not decreased, parental investment of time in children, despite demographic changes that work against such an increase (Bittman 1995; Fisher et al. 1999; Niemi 1988). While much of this evidence is still quite preliminary, it suggests the possibility of behavioral changes on the part of parents that may be widespread and tending to increase, rather than decrease, parental time with children.

DATA ON PARENTAL TIME WITH CHILDREN

In this study, we use respondent-reported time diary data from four national U.S. studies. Although some local samples in which time diary data were collected were done in the United States as early as the 1920s (see Bryant and Zick 1996), the first large-scale national time diary collection was conducted as part of a 13-country study in 1965 (Szalai 1972). Subsequent national time diary surveys were conducted at approximately 10-year intervals, in 1975, 1985, and 1998 (Bianchi, Robinson, and Sayer 2001; Converse and Robinson 1980; Juster et al. 1979; Robinson 1997). In each of the studies, a cross-section of the U.S. adult population was interviewed to collect data on individual and household characteristics and detailed information on all activities over a 24-hour period.

There are methodological differences across the surveys (a detailed comparison is shown in appendix table A1). The 1965 and 1975 studies were done in person and had higher response rates but were not spread over the entire year. The 1985 and 1998 studies were done in part or wholly over the telephone and had lower response rates but were spread over the entire year. The 1975 study also included diaries of spouses of married respondents and three follow-up interviews conducted in 1976. We exclude spouse interviews and data from the follow-up interviews for comparability with the other studies.

Methodological differences in sample design and survey administration raise the possibility that the data are not strictly comparable. In particular, the sampling frame for the 1965 study was limited to respondents aged 19 to 64 in families with at least one adult in the labor force and living in urban settings in order to conform to the design of the larger 1965 Multinational Time Use Study (Converse and Robinson 1980). Although this raises concerns that this may be a biased comparison group, an analysis (not shown) that compares child care estimates from parents in 1965 to a 1975 subsample of parents with characteristics that match the 1965 sampling restrictions indicates that trends in child care from 1965 to 1975 are the same regardless of whether the 1975 subsample or the full 1975 sample is used as the comparison. Additionally, a comparison of 1965 parent characteristics with parent characteristics from the March 1965 Current Population Survey indicates that the 1965 parent sample closely approximates U.S. parent population characteristics in 1965. Hence, change in parents' time with children between 1965 and later years does not appear to be an artifact of sample bias.

It is also possible that change may be due to different methods of survey administration. In particular, the shift from personal interview to telephone interview may have affected the reporting of mothers' time in child care. Interestingly, fathers' reports of child care time do not vary by mode

of interview. Respondents in the 1965 survey completed “tomorrow” diaries; that is, respondents were visited by an interviewer who explained and left the diary to be filled out for the following day and then the interviewer returned on the day after the “diary day” to pick up the completed diary. In 1975, respondents were initially contacted by personal interview but a “yesterday” diary was completed during the interview. In 1998, respondents were walked through a “yesterday” diary, reporting all activities for the 24-hour period (beginning just after midnight) for the day prior to the day of the telephone interview.

The 1985 sampling strategy was more complex. A large subsample was contacted by phone, recruited into the diary study, and then mailed diaries that the respondent (and all family members age 12 and over) were to complete for a specific day in the following week and then mail back (Robinson and Godbey 1999, pp. 68–69). A second subsample was interviewed by telephone and completed a “yesterday” diary for the day prior to the telephone interview. A third subsample was visited by an interviewer who collected a “yesterday” diary from respondents and also left diaries to be completed by all members of the household for the following day. We attempt to minimize mode bias in two ways. First, we exclude respondents from the 1985 mail-back sample because this method of data collection is not comparable to the immediately prior 1975 collection nor to the subsequent 1998 data collection. Second, we combine the “yesterday” diaries from respondents in the personal and telephone subsamples in 1985 but, in our discussion of results, note instances where the two modes of data collection suggest differences and complicate trend analysis, primarily for mothers.

Considerable research has established that estimates from time diary studies are more accurate than estimates from stylized survey questions such as How much time do you typically spend in [activity] over an average day/week? (Juster 1985; Marini and Shelton 1993; Robinson 1985). Stylized estimates of nonmarket work activities (e.g., child care, housework, and shopping) are higher than estimates from time diaries, and the difference is larger for activities such as many child care tasks that occur with some frequency and intermittence. Higher stylized estimates may be the result of difficulties in recalling and quickly adding up time in disjointed activities over a “typical” time period and/or interpretations of what activities comprise child care that vary from person to person and over time (Gershuny 2000). Time diary studies also minimize the possibility of respondents’ presenting themselves in a more socially desirable light, since to do so they would have to fabricate the bulk of the account of their day (Robinson and Godbey 1999; Stinson 1999). In contrast, respondents may answer stylized questions (consciously or not) so as to present their activities in the best or most socially appropriate

light, either by adding or by subtracting time from certain activities. For example, because reading to children is an activity in which “good” parents are normatively supposed to engage, parents may respond to questions about the frequency with which they read to their children with inflated estimates (Hofferth and Sandberg 2001*b*). Further, because the time diary format forces respondents to remain within a 24-hour reporting period, time diary estimates provide more accurate assessments of historical change, since increases of time in certain activities must be balanced by decreases of time in other activities. In contrast, surveys that use stylized questions about child care and housework often yield estimates that exceed 24 hours.

However, the time diary data do have certain disadvantages. First, no large data collections were supported by the U.S. federal government in earlier decades and the small sample size of extant time diary surveys precludes examination of variation in parental time with children across parental subgroups. Second, time diary studies do not measure the time parents are accessible to children but not directly engaged with them. Hence, we cannot rule out the possibility that changes in families, such as increased rates of single parenthood and maternal employment, may have reduced the amount of time that parents, in particular mothers, are available to children. Additionally, it is not possible to ascertain the quality of parents’ time with children, and it may be that some parents today are trading quantity for quality time. Nonetheless, despite their shortcomings, we use time diary data in this study because they are the only comparable national data available that directly measure parental time investments in children and thus allow an assessment of how parents’ child care time has responded to changes in the family and/or parental behavior.

MEASUREMENT OF PARENTAL TIME WITH CHILDREN AND SAMPLE DEFINITION

Much of the existing time diary literature on parents’ time with children focuses on time spent in child care activities. We follow suit and construct a measure that sums the minutes in child care activities reported by mothers and fathers on the diary day and refer to this measure as “primary child care time.” Mothers (fathers) who reported extremely high values of child care (above the 95th percentile) were assigned the 95th percentile value. In each of the U.S. time diary studies, a standard series of questions was used to collect the time diary by sequentially “walking” respondents through a 24-hour period. Question wording is shown in appendix table A2. Responses to the question “What were you doing?” are commonly

known as “primary” activities because they are thought to be the most salient activity for respondents. Responses to the question “What else were you doing?” (see Q4) are referred to as “secondary” activities because they capture time spent in simultaneous activities that are not the major focus of attention. For example, respondents might report getting a child dressed for school (primary activity) while also listening to the radio (secondary activity). Our measure of child care time consists only of responses to the initial question about “primary activities” coded as child care. While other measures of parents’ time with children—such as time in secondary child care activities and time with children in any activity—can be constructed from time diaries, only the measure of primary child care time is available in each of the surveys used in this analysis.

Comparable coding procedures were used in each of the U.S. time diary surveys. These were originally developed for the 1965 Multinational Time Use Study to classify activities in mutually exclusive categories based on meaningful distinctions (Stinson 1999). Appendix table A3 lists the categories into which activities were coded. Child care is captured by a set of eight codes that allow us to distinguish two types of primary child care time: daily child care time (baby care, child care of children age five and over, medical care of children, other child care, and travel associated with child care activities) and time in teaching and playing activities (helping or teaching, talking or reading, indoor playing, outdoor playing). We use these measures to assess whether the pattern of change in parents’ child care time is similar for more routine and more developmental activities. The latter category may signal parental time investments of greater quality or engagement and thus may have a stronger relationship with child well-being (Zick and Bryant 2001).

We restrict our analytic sample to respondents in households with children under age 18. Because all adults in a household were eligible for inclusion in the sample, respondents other than parents were interviewed. In the 1965, 1975, and 1985 studies, respondents were asked about own children under 18 residing in the household. In the 1998 study, respondents were asked about any children under 18 residing in the household; thus, an older sibling or roommate could be the respondent. Hence, parental status was determined in three ways. First, respondents in households with children under 18 who indicated that they were either married or cohabiting and that there were no more than two adults in the household were classified as parents. Second, respondents in households with children under 18 who indicated they were single and that there were no other adults in the household were also classified as parents. Third, married respondents with more than two adults in the household and single respondents with more than one adult in the household whose verbatim report of a diary activity referenced their own child or children (e.g., the

respondent reported “read book to my daughter”) were coded as parents. We exclude single fathers because of the small number surveyed at each time point. In 1965, our analytic sample consists of 417 mothers and 326 married fathers; in 1975, 369 mothers and 239 married fathers; in 1985, 334 mothers and 184 married fathers; and, in 1998, 273 mothers and 141 married fathers.

MEASUREMENT OF COMPOSITIONAL AND BEHAVIORAL FACTORS

Parental investments in children are a function of parents’ and children’s demographic characteristics and beliefs and feelings about appropriate parental behavior. In adjudicating between competing explanations of change in parental time with children, we use measures of married/single parent status, parental employment, number of children, and age of youngest child to quantify the most important compositional factors. We also consider parental education and age as key demographic measures but recognize that they may also index behavioral factors. Above and beyond any compositional effect of greater educational attainment among parents, education influences parental values and attitudes about child-rearing practices. Parental age may also capture behavioral effects insofar as older parents may have fewer unintended births and may have actively chosen to become parents and thus have greater propensity to spend time with children. We use measures of survey year to capture behavioral factors that we are not able to quantify with the other measures, such as changes in parental attitudes and societal norms about appropriate parenting behavior.

Marital status is a dummy variable coded “1” if currently married and “0” if currently single. Parental employment is operationalized with two measures: an employed/nonemployed dummy variable, coded “1” if employed, and a continuous measure of usual weekly hours of paid employment. Number of children in the household is a continuous variable; age of youngest child is a dummy variable coded “1” if children under age six are present. Parental education is classified into three categories: high school diploma or less education (the omitted category), some college education, and a college degree or postbaccalaureate education. Parental age is classified into five groups: 18–24, 25–34 (the omitted category in the regressions), 35–44, 45–54, and 55–64. Survey year consists of four dummy variables; the dummy for the 1998 survey year is the omitted category in the regressions. Last, we include a dichotomous variable indicating if the diary day occurred on a weekday or weekend, coded “1” if the diary day occurred on Saturday or Sunday and coded “0” if the diary day occurred Monday to Friday, as a control.

ANALYSIS PLAN

Our analysis first describes trends from 1965 to 1998 in mothers' and married fathers' participation and time spent in primary child care activities. We assess trends for all mothers and also examine variation in maternal time by marital status. Trends in single fathers' time with children are not examined because of the small number of such fathers at each time point. We compare trends in married mothers' and married fathers' primary child care time to determine whether relative levels of maternal and paternal time investments in children have changed. Prior research indicates that the child care tasks of mothers and fathers differ, with mothers doing more routine care of children while fathers spend a proportionally larger amount of their time engaged in teaching or playing activities (Pleck 1997). That is, fathers selectively invest their time in the more rewarding and enjoyable child care activities while mothers tend to perform the day-to-day child rearing. This raises the question of whether trends in mothers' and fathers' time caring for children have occurred across all activities, or whether instead any change among mothers is concentrated in more routine activities while change among fathers is concentrated in more developmental activities.

We use two approaches to assess the degree to which changes in child care among mothers and married fathers have been affected by compositional shifts versus changes in behavior. First, we pool data from the four surveys and estimate tobit regressions of mothers' and married fathers' minutes per day in primary child care time. Second, we conduct a decomposition analysis of the estimated change in mothers' and fathers' time with children between 1965 and 1998 to identify the portion of change resulting from compositional shifts versus the portion resulting from behavioral changes. Descriptive analyses are weighted to adjust for survey design and for sex, age, and educational status; multivariate analyses are not weighted. A comparison of mothers' and married fathers' sample characteristics with population characteristics for mothers and married fathers from the 1965, 1975, 1985, and 1998 March Current Population Surveys (CPS) is shown in appendix table A4 and indicates that parents' characteristics from the time diary samples closely approximate those of parents from the CPS.

We use the multivariate tobit models as a tool to describe and decompose change over time. A causal model of time allocation, while desirable, imposes data requirements that exceed what is available. Ideally, in all years, we would like to have data on couples and panel data with repeated measures of time use for both members of the couple, to better capture the joint decision making that is involved in (married) mothers' and fathers' allocation of time to child care, other unpaid household work, and

market work. Couples make trade-offs and negotiate about who will do the work of the home and who will provide income to the family. Individuals' decisions about time allocated to child care influence their time allocated to other activities, including market work, and vice versa. Spouses' time allocations influence each other.

In this analysis, we use four cross-sectional time diary data collections, only two of which include diaries of spouses (the 1975 survey and a portion of the sample in 1985). We also do not have panel data (other than in 1975 when respondents were interviewed four times over a course of the year but where only 63% of the respondents originally interviewed completed all four diaries). Hence, our modeling strategy must be viewed as one aimed at assessing the strength of association among family compositional and employment factors and time in child care. This strategy allows us to assess whether compositional shifts alone can account for changes in mothers' and fathers' time in child care. We view this as a necessary starting point for understanding how and why parental time with children may have changed as families underwent major transformations and women's market work increased substantially.

RESULTS

Table 1 shows estimates of mothers' average minutes per day in primary child care activities; the percentage of mothers who report child care on the diary day; and average daily minutes of child care among only those mothers reporting child care activities (referred to as participants' minutes). Trends are shown for all mothers and separately for married and single mothers. Significant differences across survey years are shown in the t score columns.

Focusing first on the trend for all mothers (see cols. 1–4), primary child care time declined from 80 to 66 minutes between 1965 and 1975, but it then increased, rising to about 95 minutes (about an hour and a half per day) in 1998. The initial decline was due to slightly fewer mothers' reporting basic, daily child care activities in 1975 than in 1965 and to a decrease in daily care of children among mothers reporting child care time. This decline in daily care activities coincides with a period in which fertility declined rapidly in the United States, thereby decreasing the number of very young children in the home. However, note that there was also a shift in mode of survey administration from a "tomorrow" diary completed by the respondent on the day after the visit by the interviewer in 1965 to a "yesterday" diary completed during the personal interview in 1975.

The proportion of mothers reporting child care continued to decline

TABLE 1
TRENDS IN MOTHERS' CHILD CARE PARTICIPATION AND MINUTES PER DAY, 1965–98

	ALL MOTHERS					MARRIED MOTHERS					SINGLE MOTHERS				
	1965	1975	1985	1998	t Score	1965	1975	1985	1998	t Score	1965	1975	1985	1998	t Score
Average minutes per day:															
Primary child care	80	66	77	95	acef	84	67	80	99	acef	59	63	67	85	
	(75)	(64)	(85)	(88)		(70)	(65)	(86)	(92)		(98)	(63)	(82)	(79)	
Daily care	71	54	61	71	ae	74	55	64	74	ae	52	52	54	62	
	(70)	(56)	(70)	(72)		(65)	(56)	(70)	(77)		(92)	(57)	(68)	(60)	
Teaching and playing	10	13	15	24	abcef	10	13	16	25	bcef	7	12	13	23	ce
	(18)	(22)	(29)	(43)		(18)	(21)	(30)	(44)		(17)	(23)	(27)	(40)	
Proportion reporting:															
Primary child care .....	.80	.76	.70	.71	bc	.85	.76	.72	.72	abc	.51	.76	.64	.66	a
Daily care .....	.78	.73	.66	.67	bc	.84	.73	.68	.68	abc	.47	.73	.60	.62	a
Teaching and playing .....	.26	.29	.29	.31		.28	.32	.30	.33		.15	.23	.24	.26	
Participants' minutes per day:															
Primary child care	100	87	110	135	acdef	99	89	111	137	cdef	117	84	105	129	e
	(71)	(61)	(83)	(78)		(66)	(61)	(83)	(80)		(106)	(60)	(83)	(71)	
Daily care	91	74	93	107	acde	88	75	94	109	acde	112	71	91	99	ae
	(67)	(54)	(68)	(66)		(62)	(54)	(68)	(70)		(103)	(57)	(69)	(55)	
Teaching and playing	36	43	54	78	abcedef	36	41	54	75	bcedef	43	51	54	88	cef
	(17)	(20)	(32)	(47)		(17)	(18)	(33)	(48)		(20)	(23)	(31)	(45)	
N	417	369	334	273		358	278	254	194		59	91	80	79	

NOTE.—SDs in parentheses. The data sources for the authors' calculations are Converse and Robinson (1980), Juster et al. (1979), Robinson (1997), and Bianchi et al. (2001).

^a 1965 and 1975 means significantly different at $P \leq .05$.

^b 1965 and 1985 means significantly different at $P \leq .05$.

^c 1965 and 1998 means significantly different at $P \leq .05$.

^d 1975 and 1985 means significantly different at $P \leq .05$.

^e 1975 and 1998 means significantly different at $P \leq .05$.

^f 1985 and 1998 means significantly different at $P \leq .05$.

after 1975, falling to 71% by 1998. Yet, despite lower reporting levels, mothers who reported child care activities in 1985 and 1998 were spending considerably more time than mothers in prior decades. Hence, the 19-minute-per-day increase on average between 1975 and 1998 masks greater variation in maternal child care time, with some mothers spending significantly less or no time in child care while other mothers were spending significantly more time in child care.

For mothers, possible effects of the change in mode of data collection also complicate the picture. Mothers who responded by telephone in 1985 were less likely to report child care as a primary activity than those interviewed in person (data not shown). However, the telephone sample provided significantly higher estimates of the amount of time in child care activities. Comparison of 1975 and 1985 suggests little change in mother's child care time when we use only the personal interview sample in 1985 but an increase in mother's child care activities when only the telephone sample is used.

Trends in mothers' daily care of children mirror trends in overall primary child care time as daily care comprises the majority of child care time. Trends for teaching and playing activities diverge slightly from the overall pattern. Maternal time teaching and playing with children increased between 1965 and 1998, rising from 10 to 24 minutes a day. The increase reflects a small rise in the number of mothers reporting these activities and a doubling of the amount of time spent teaching and playing with children. Mothers' participation increased five percentage points over the period (although not significantly), to just under one-third of mothers reporting developmental child care activities in 1998. Among mothers reporting teaching and playing activities on the diary day, average time increased to about 1 hour 20 minutes in 1998, compared to slightly more than 30 minutes in 1965. Again, mode of survey administration may influence this picture. What is clear is that, after 1985, when mode of interview is comparable (yesterday diary, telephone interview), significantly more maternal time is reported in teaching and playing activities with children in 1998 than in 1985.

Table 1 also shows trends for mothers by marital status (married mothers are shown in cols. 6–10, single mothers in cols. 11–15). Not surprisingly given their larger numbers, trends for married mothers track those for all mothers described above. Among single mothers, though, there are a few notable differences. In contrast to the nonlinear trend for married mothers, single mothers' time in child care increased monotonically over the period. However, the proportion of single mothers reporting child care increased by 25 percentage points between 1965 and 1975, rising from 51% to 76%, but then declined to 66% in 1998. Child care time among single mothers reporting child care activities declined between 1965 and

1975 and then increased in 1985 and 1998 (see participants' minutes), similar to the pattern among married mothers. Estimates for single mothers, however, are based on small samples with resulting large standard errors relative to the estimates. In addition, it is possible that the apparent dissimilarity in the trends for single mothers as compared to married mothers is an artifact of the 1965 sample design. Because only persons in families with a labor force participant were sampled in 1965, the percentage of employed single mothers in the sample was about 30 percentage points higher than national levels and this may be deflating the percentage reporting time with children and thus average minutes in child care. While single mothers' participation in and minutes in child care are lower than among married mothers, the difference is much more pronounced in 1965 than at later time points. In sum, the picture that emerges for mothers is a small increase in primary child care time that stems from a 1965 to 1975 decline and then a 1975 to 1998 increase in time in more routine child care and a steady increase in time doing more developmental activities.

Given possible mode of survey administration effects, what conclusions about the trend in mothers' time in child care can therefore be drawn? For married mothers, child care time may have declined between 1965 and 1975. By 1985, married mothers' minutes in child care rose but estimates were about 20 minutes lower for the personal interview sample compared to the telephone interview sample. After 1985, with mode held constant, there was almost a 20-minute increase in child care time for married mothers. Our conclusion is that married mothers' time in child care activities has likely increased since 1985; is currently at least as high, and possibly higher, than in 1965; and is almost certainly higher than in 1975. For single mothers, we are less confident of trends: sample sizes are small, especially when we separate 1985 respondents by mode of data collection, and estimates are more unstable than for married mothers.

Table 2 shows estimates of married fathers' average minutes per day in primary child care activities, the percentage who report child care on the diary day, and average daily minutes of child care among only those reporting child care activities (referred to as participants' minutes). Significant differences across survey years are shown in the t score columns. Comparison of fathers' child care time in 1985 by mode of survey administration suggests that, unlike for mothers, fathers' estimates are unaffected by whether the mode of data collection was by personal interview or by telephone.

Inspection of table 2 indicates two findings of interest. First, married fathers have significantly increased both reporting of child care activities and time spent in primary child care activities. The percentage of fathers reporting child care activities declined slightly between 1965 and 1985

Investing in Children

TABLE 2
TRENDS IN MARRIED FATHERS' CHILD CARE PARTICIPATION AND MINUTES PER DAY,
1965–98

	MARRIED FATHERS				t Score
	1965	1975	1985	1998	
Average minutes per day:					
Primary child care	17 (25)	17 (30)	26 (52)	51 (73)	bcd ^a
Daily care	10 (18)	13 (26)	18 (41)	32 (48)	bcd ^a
Teaching and playing	7 (16)	3 (10)	7 (21)	20 (41)	acd ^b
Proportion reporting:					
Primary child care .....	.41	.39	.35	.53	cd ^c
Daily care .....	.29	.33	.29	.49	cd ^c
Teaching and playing .....	.21	.13	.15	.24	ad ^d
Participants' minutes per day:					
Primary child care	41 (24)	43 (33)	74 (62)	96 (68)	bcd ^e
Daily care	34 (19)	40 (32)	64 (52)	65 (45)	bcd ^e
Teaching and playing	35 (17)	27 (14)	50 (26)	81 (38)	abcd ^f
<i>N</i>	326	239	184	141	

NOTE.—Nos. in parentheses are SDs. The data sources for the authors' calculations are Converse and Robinson (1980), Juster et al. (1979), Robinson (1997), and Bianchi et al. (2001).

^a 1965 and 1975 means significantly different at $P \leq .05$.

^b 1965 and 1985 means significantly different at $P \leq .05$.

^c 1965 and 1998 means significantly different at $P \leq .05$.

^d 1975 and 1985 means significantly different at $P \leq .05$.

^e 1975 and 1998 means significantly different at $P \leq .05$.

^f 1985 and 1998 means significantly different at $P \leq .05$.

but then increased substantially. Whereas about one-third of married fathers were reporting child care in 1985, over one-half were reporting child care activity in 1998. The increase is due to more married fathers doing daily child care activities as well as teaching and playing activities. Second, married fathers' time in child care increased between 1965 and 1985, from 17 to 26 minutes, then continued to climb to just under one hour per day by 1998. Again, increases stem from more time in routine as well as developmental activities. While this seems to indicate the bulk of change occurred after 1985, child care time among only those fathers reporting the activity increased substantially, by about 33 minutes, between 1965 and 1985 and then rose another 22 minutes by 1998. This suggests that by 1985 a minority of fathers had altered considerably their levels of parental involvement, but the majority of fathers continued to spend little or no time in child care activities. By 1998, however, a majority

of fathers appear to have adopted a pattern of greater involvement in more routine as well as developmental care of children.

Although married fathers are spending more time caring for their children today than in the past, married mothers continue to spend relatively more time in child care activities. This suggests that specialization of mothers in nonmarket work activities and fathers in market work has not disappeared in married couple households. Figure 1 shows the ratio of married mothers' to married fathers' time in all primary child care activities, in daily care, and in teaching/playing activities.

Considering all child care activities, the ratio of married mothers' to married fathers' time in child care declined, falling from 4.9 in 1965 to 1.9 in 1998. Contrary to what one might expect from past research, the decline in the overall ratio appears to be a function of increased investments among married fathers in daily child care activities coupled with an initial decline but then return to 1965 levels among married mothers. This is shown by the ratio of married mothers' to married fathers' daily child care time, which drops considerably from 7.4 to 2.3 over the period. Hence, married fathers are not specializing only in the more enjoyable or perhaps rewarding child care activities, leaving the more routine work to mothers, but are getting more involved in the day-to-day care of children. The trend in the ratio of married mothers' to married fathers' time teaching and helping children is not monotonic because married mothers' teaching and playing time increased steadily between 1965 and 1998 while married fathers' time initially declined but then rebounded. Hence, the relative level of married mothers' and fathers' teaching and playing time is similar in 1965 and 1998, but the absolute level of involvement in these activities is higher in 1998 than in 1965. This suggests that married fathers have not substituted involvement in some child care activities for involvement in other activities but instead are spending more time across the full spectrum of child care activities.

In sum, based on the descriptive results, we would estimate that rather than a 22-hour decline in parental time since the late 1960s, mothers and married fathers may have adjusted how they spend their time to more than compensate for changes in the family that decreased parental availability to children. While our sample sizes are not large, these data provide the first national look at trends in U.S. parents' behavior vis-à-vis their children. The descriptive look is mostly positive, in terms of increased time with children, and it is corroborated by findings from children's time diaries (Sandberg and Hofferth 2001) and by findings from other industrial countries, Australia and Britain in particular (Bittman 1995; Fisher et al. 1999). In the multivariate results below, we examine factors associated with change in mothers' and married fathers' time with children. What has been the net effect of compositional shifts? For example, have in-

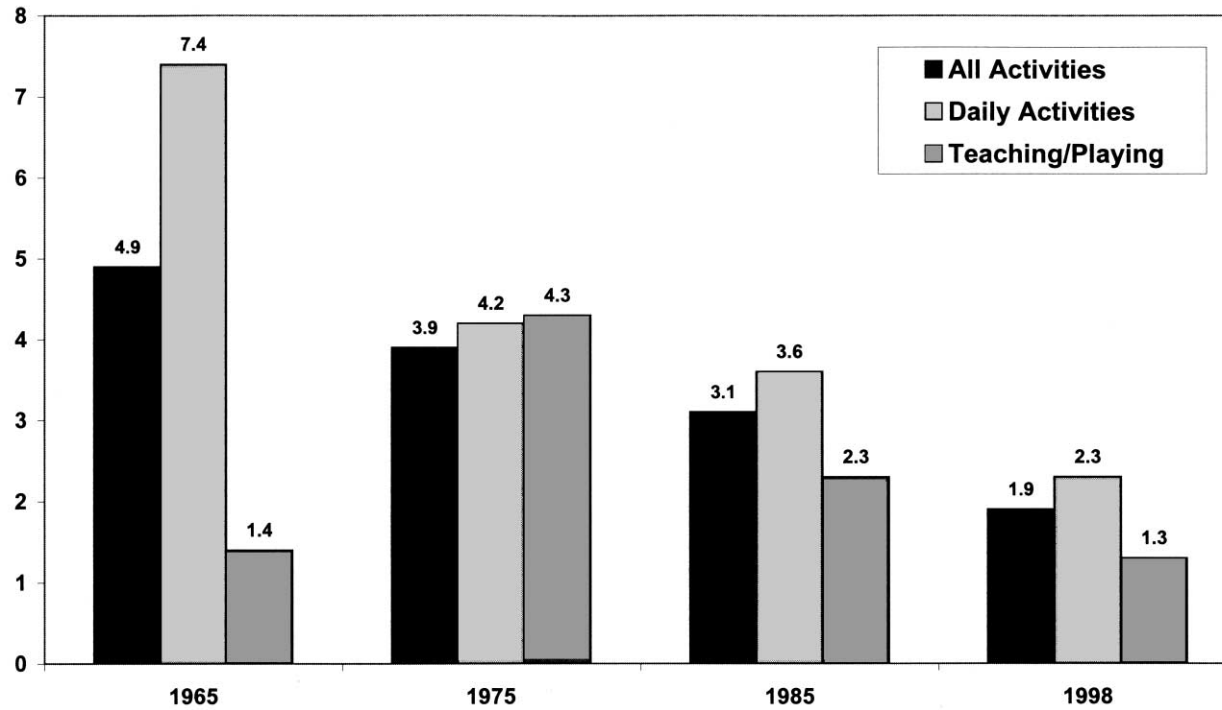


FIG. 1.—Ratio of married mothers' to married fathers' primary child care time

creased single parenthood and maternal employment been counterbalanced by greater parental educational attainment and/or an increased propensity among parents to spend time caring for their children? Are the relative contributions of compositional and behavioral factors associated with changes in parental time in child care similar for mothers and married fathers, or have they responded differently to changes in family structure and shifts in the context of parenting?

Multivariate Results

Table 3 combines the four survey years and regresses mothers' and fathers' minutes per day of primary child care on the compositional and behavioral measures. We estimate tobit regressions because of censoring due to some parents reporting zero minutes in child care activities (Greene 1997). Because our interest is in change in the observed time mothers and fathers spend in child care activities (rather than in the underlying latent measure), the tobit coefficients cannot be interpreted directly (Wooldridge 2000). Instead, we focus the discussion on two marginal effects: (1) changes in the conditional expected value of time in child care for mothers and fathers reporting nonzero time in these activities, and (2) changes in the probability of mothers and fathers engaging in child care activities (McDonald and Moffitt 1980). Marginal effects were calculated using the dtobit command in Stata 7 (see Cong 2000).

Tobit coefficients from the equation for mothers' time in child care are shown in table 3, column 1, the marginal effect of changes in the conditional expected value in column 2, and the marginal effect of changes in the probability of reporting child care (e.g., probability uncensored) in column 3. Comparable estimates from the equation for married fathers' time are shown in columns 4–6.

The regression results indicate that mothers and married fathers were spending significantly more time in direct child care activities in 1998 as compared to parents in previous years, net of compositional factors and controls. Conditional on reporting time, mothers and married fathers spent about 20 minutes less per day caring for children in 1965 and 1975, relative to parents in 1998 (see cols. 2, 5). While there is no significant difference between mothers' child care time in 1985 and 1998, married fathers in 1985 spent 15 fewer minutes caring for children as compared to married fathers in 1998 (conditional on reporting minutes). In addition, year coefficients are also associated with higher probabilities of engaging in child care among married fathers and mothers. Married fathers were about 25%–31% less likely to spend time in child care at earlier time points, relative to married fathers in 1998 (see col. 6). Mothers in 1965 and 1975

had a 12%–17% lower probability of spending time in child care, relative to mothers in 1998.

Somewhat surprisingly given past research, our models indicate that marital status is not associated with significantly more time in child care, all else being equal (models not shown also indicated no significant interactions of marital status with compositional factors or controls). Some scholars (e.g., Vickery 1977) have suggested that single mothers may have more of a time crunch and thus have less time available for child care activities. However, the null finding suggests that it is not marriage per se that makes a difference but perhaps the absence of a second adult in the household.

As expected, working longer hours in paid employment is associated with less child care time for mothers and married fathers. The effect of employment hours is primarily on reducing time spent in child care; longer employment hours exert little downward pull on the probability of parents' engaging in child care activities (see cols. 3 and 6). Additionally, employment hours influence parents' time in direct child care activities more so than does employment per se.

Each additional child is associated with a six-minute-per-day increase in mothers' child care time (conditional on mothers' reporting child care) but has only a small effect on the probability of doing child care. More children are not associated with married fathers' time with children. As expected given the additional care required by preschoolers, the presence of young children increases mothers' time in child care by about 36 minutes and married fathers' time by 15 minutes (conditional on spending time in child care). Moreover, having young children increases the probability of engaging in child care activities by 22% for mothers and 25% for married fathers.

While college-educated mothers and married fathers both spend more time in direct child care (*vis-à-vis* parents with high school educations), the association of education with child care time is different for mothers and fathers. Having a bachelor's degree is associated with 16 more minutes of child care among mothers; however, college-educated mothers have only a slightly higher probability of doing child care activities than do less educated mothers (see cols. 2, 3). In contrast, college-educated fathers spend more time doing child care, about 10 minutes more conditional on reporting time, but they also have a 16% higher probability of engaging in child care, relative to less educated fathers.

In terms of age, older mothers spend less time in direct child care, compared to mothers 25–34 years old. Older mothers are also less likely to engage in child care activities, relative to younger mothers. In contrast, age is not associated with married fathers' direct child care time. Because the years from 35 to 54 are prime years for career advancement, the results

TABLE 3
 TOBIT MODELS OF MOTHERS' AND MARRIED FATHERS' MINUTES PER DAY IN PRIMARY CHILD CARE

	MOTHERS			MARRIED FATHERS		
	Tobit	Conditional on Being Uncensored	Probability Uncensored	Tobit	Conditional on Being Uncensored	Probability Uncensored
Year (1998 omitted):						
1965	-31.453** (4.27)	-16.967	-.118	-56.761** (6.72)	-17.332	-.288
1975	-43.987** (5.95)	-23.144	-.17	-63.203** (7.03)	-18.254	-.309
1985	-7.608 (1.03)	-4.215	-.028	-50.659** (5.34)	-14.544	-.25
Married	11.196 (1.90)	6.159	.041			
Employment status:						
Employed	-15.083 (1.55)	-8.478	-.054	2.811 (.17)	.896	.015
Usual paid work hours	-.574* (2.52)	-.322	-.002	-.523* (2.19)	-.169	-.003
Number of children	11.541** (5.68)	6.473	.041	-2.773 (1.11)	-.893	-.015
Preschooler present	62.679** (10.76)	35.568	.219	47.289** (6.41)	15.195	.247
Education (high school or less omitted):						
Some college	4.182 (.67)	2.365	.015	12.919 (1.60)	4.317	.069

College graduate	27.600** (4.01)	16.406	.09	29.056** (4.17)	9.94	.156
Age group (25–34 omitted):						
18–24	-12.734 (1.57)	-6.922	-.048	-21.787 (1.68)	-6.496	-.112
35–44	-23.939** (3.96)	-13.12	-.088	7.878 (1.04)	2.558	.042
45–54	-32.767** (3.95)	-17.05	-.129	-5.626 (.57)	-1.788	-.03
55–64	-43.488** (2.81)	-21.412	-.18	-4.535 (.28)	-1.437	-.024
Weekend diary day	-31.269** (5.84)	-16.759	-.119	4.03 (.63)	1.308	.021
Constant	61.194** (5.61)	34.322	.219	24.912 (1.44)	8.026	.133
-2 log likelihood	-6,443.56			-2,465		
Censored observations	337			509		
Uncensored observations	1,056			381		
Total observations	1,393			890		

NOTE.—Absolute value of t statistics in parentheses.

* $P \leq .05$.

** $P \leq .01$.

suggest that intensified paid work demands during midlife (perhaps not fully captured by the employment indicators) may be associated with less maternal time and engagement in direct child care activities. However, the results may be picking up age of children effects, since our models control only for presence of young children, rather than age of all children.

Finally, mothers who completed the time diary on a weekend spent less time in child care, about 17 fewer minutes conditional on reporting time, relative to mothers who completed the time diary on a weekday. Mothers who completed the time diary on a weekend are also about 12% less likely to report child care activities than mothers who completed the diary on a weekday. The findings are counterintuitive, as mothers might be expected to have more time available to care for children on weekends. However, it is possible that mothers, who tend to be employed fewer hours than fathers, “trade off” child care time with fathers, doing more of the weekday care in exchange for greater father involvement in care on the weekends. While the weekend control has no effect on fathers’ time with children in our models, recent research using children’s diaries reports that married fathers spend significantly more time with children on weekends than weekdays (Yeung et al. 2001). It is also possible that mothers spend time with children on the weekends in activities that are coded as free time, rather than direct child care.

The regression results indicate that both compositional and behavioral factors are associated with change in mothers’ and married fathers’ time with children. What the regression results do not indicate, however, is the relative contribution of behavioral versus compositional shifts. For this information, we decompose the predicted change in mothers’ and fathers’ time with children between 1965 and 1998. Results are presented in table 4. The decomposition method is similar to a Oaxaca decomposition in that change is separated into a portion attributable to differences in behavior (i.e., differences in estimated coefficients) and a portion attributable to differences in composition (i.e., differences in observed sample characteristics; Oaxaca 1973). However, this “Oaxaca-type” method can be used with nonlinear dependent variables, unlike the standard Oaxaca decomposition, which is appropriate only for linear dependent variables (Barmby and Smith 2001; Joesch and Spiess 2002). The decomposition analysis is estimated using the following equation:

$$\text{predicted minutes}_{i_1} - \text{predicted minutes}_{i_2} = \\ Y(B_{i_1} * X_{i_1} - B_{i_1} * X_{i_2}) + Y(B_{i_1} * X_{i_2} - B_{i_2} * X_{i_2}).$$

The first term on the right-hand side of the equation represents the change in mothers’ (married fathers’) predicted mean child care time between 1965 and 1998 due to differences in sample characteristics at

TABLE 4
 DECOMPOSITION OF THE PREDICTED DIFFERENCE IN PARENTS' MINUTES PER DAY OF
 PRIMARY CHILD CARE, 1998–1965

	ALL MOTHERS		MARRIED FATHERS	
	Minutes	%	Minutes	%
Predicted mean minutes of primary child care: ^a				
1998 betas, 1998 means	112		82	
1965 betas, 1965 means	91		34	
Difference predicted means,				
1998 – 1965 (1998 coefficients as weights):	21	100	48	100
Characteristic component	–12	–57	5	10
Coefficient component	33	157	43	90
Difference predicted means,				
1965 – 1998 (1965 coefficients as weights):	–21	100	–48	100
Characteristic component	13	–62	1	–2
Coefficient component	–34	162	–49	102

NOTE.—Predicted minutes₁ – predicted minutes₂ = $Y(B_{11} * X_{11} - B_{11} * X_{12}) + Y(B_{11} * X_{12} - B_{12} * X_{12})$. The decomposition is similar to a Oaxaca decomposition in that change is separated into that attributable to differences in rates or propensities (i.e., intercept and slope differences) and differences in composition (i.e., changes in means of the independent variables between 1965 and 1998). However, this “Oaxaca-type” decomposition can be used with nonlinear models (see Barmby and Smith 2001; Joesch and Spiess 2002).

^a Predicted means were calculated with the Stata, ver. 7, “predict” postestimation command “where $e(a, b)$ calculates $E(x, b + u_j | a < x, b + u_j < b)$ the expected value of $y_j | x_j$, conditional on $y_j | x_j$ being in the interval (a, b) , which is to say, $y_j | x_j$ is censored” (Stata 7 reference manual Su-Z, p. 176). Estimates were calculated as if all mothers (married fathers) had characteristics set to 1998 (1965) weighted averages.

each time point; the second term on the right-hand side of the equation represents the change in mothers’ (married fathers’) predicted child care time due to differences in the effect of estimated coefficients at each time point and thus represents nonstructural behavioral differences (Barmby and Smith 2001). The decomposition can be calculated using estimated coefficients from 1965 or 1998 as weights, and we show results from each estimation. However, because the results are similar, we discuss only the decomposition using the 1998 coefficients as weights.

The decomposition indicates that parents’ time in primary child care activities rose because mothers and married fathers both increased their propensity to invest time in child care. Between 1965 and 1998, predicted mean time in child care increased by 21 minutes for mothers (112 – 91) and 48 minutes for married fathers (82 – 34). If mothers in 1998 had the same demographic characteristics as mothers in 1965, compositional differences alone would have *decreased* primary child care time by 12 minutes a day, a 57% downward shift, with most of the decline due to increases in maternal employment (results not shown). However, negative

compositional changes were more than outweighed by behavioral shifts that worked to increase mothers' time in primary child care by 33 minutes a day.

For married fathers, compositional and behavioral shifts both contribute to the 48-minute-per-day increase in primary child care time between 1965 and 1998, but the relative contribution of behavior is much greater. Increases in married fathers' propensity to spend time caring for children explain 90% (or 43 minutes) of the change. In contrast, shifts in demographic characteristics account for only 10% of the increase in fathers' child care time (or five minutes per day), with most of this attributable to increased levels of paternal education (results not shown).

In sum, our results indicate that parents have altered their behavior such that they are spending more time caring for children in the late 1990s than did parents in previous decades. Contrary to the conventional wisdom, changes in American families have not reduced mothers' and married fathers' child care time. Mothers are spending more time in paid employment in the 1990s than the 1960s, and fewer mothers are married, but mothers' time with children has not declined drastically because of these factors, as some feared. At any point in time, children of employed mothers spend less time with their mothers than children of nonemployed mothers. However, children of employed mothers in 1998 (the modal group) may spend more time with their mothers than children of the average mother in 1965 when most mothers were not employed, given the increased propensity of mothers to devote what time they have to their children. In addition, behavioral change may be more pronounced among married fathers than mothers, as indicated by fathers' greater amount and likelihood of direct child care time in 1998 compared to earlier decades.

DISCUSSION

The literature on parental time with children has two broad strands. The first seeks to explain the relationship between mothers' employment and mothers' and fathers' time with children, measured as time in direct child care or in terms of children's developmental or educational outcomes (Bryant and Zick 1996). The second strand seeks to explain the extent of fathers' involvement with their children, in terms of their engagement, accessibility, and/or responsibility, as determined by the father's motivation, skills, social support, and institutional practices (Lamb 2000; Pleck 1997). As mothers have increasingly moved into paid employment, debates in both strands have intensified over what mothers should do outside of their reproductive and household maintenance role and what fathers

should do outside of their breadwinner role. At the same time, the increase in divorce and nonmarital childbearing, the feminist movement, and the decline in fertility have called into question the desirability of the economic model of specialized marital roles, with mothers invested most heavily in domestic labor and fathers in market labor. What has emerged is increasingly an ideal of shared parenting: mothers and fathers as coproviders and coparents (Coltrane 1996; Doherty et al. 1998; Pleck and Pleck 1997).

Our data suggest that among some parents the reality is moving in the direction of this ideal. Married fathers are spending significantly more time in routine and developmental child care activities today than in the past although their time with children still remains lower than mothers' child care time. Institutional and normative barriers, namely the dearth of work/life policies in the United States and deep-rooted attitudes that mothers should be primary caretakers of children, may hinder further convergence in mothers' and fathers' time with children. However, the upward trend in married fathers' time and, at minimum, the stability in mothers' time between 1985 and 1998 may signal additional movement toward similarity. Deutsch (1999) contends that the movement toward coparenting is occurring because continued inequality in parental time caring for children is no longer rational or justifiable, given women's gains in the labor force, greater societal expectations of gender equality, and increased acceptance of divorce.

Nonetheless, there are two important caveats on the trend toward greater gender similarity in parenting. First, we do not have data on married couples, so we are certain only that married mothers' and married fathers' child care time is more similar across all households. Our results do not indicate, however, whether mothers' and fathers' child care time is more similar within the same household. Second, the time diary trends do not capture the group of fathers least involved with children, those who do not live with their children. It is possible that norms of greater father involvement in child rearing may be reaching nonresidential fathers as well, but such fathers continue to spend less time with their children than married fathers do (Hofferth et al. 2002). As the ease of opting out of married parenting increases, the time diary trends for married fathers may be picking up the child care activities of an increasingly select group of fathers. More so in 1998 than in 1965, it may be men who are most interested in spending time with children who remain in marriage. Unfortunately, there is no reliable trend data on time with children among nonresident parents, most of whom are fathers.

Perhaps most surprising to some will be the time diary trends in maternal care of children that suggest that mothers' time caring for children is currently at least as high, and perhaps higher, than it was at the height of the baby boom in 1965. Combine this with the upward trend in fathers'

child care time, at least among married fathers, and it would appear that children, on average, are increasingly advantaged in terms of the parental time and attention they receive. Yet there remains widespread societal concern about child neglect that might accompany greater family disruption and more maternal employment. How can these divergent realities be reconciled?

One possibility is that averages mask greater heterogeneity among parents than in the past. For example, our results hint at greater inequality among parents in parental child care time today than in the past. While child care time on average has increased for mothers and married fathers, the descriptive and multivariate results indicate that some parents are spending substantially more while other parents are spending substantially less time caring for children. Our results suggest that married and single mothers, all else being equal, spend similar amounts of time in direct child care. However, all is rarely equal in the lives of married and single mothers, a complexity our small sample sizes prevent us from examining empirically. Trends in nonmarital fertility and marriage and divorce rates offer grounds to speculate about what might be occurring. Married parents today are more likely to be college-educated, to have children relatively late, to have higher financial resources, and to remain married. In contrast, single mothers today are likely to be never married, to be less educated, to have children relatively young, and to have lower financial resources. As a consequence, children in married couple families may be benefiting from two parents who have a bundle of characteristics associated with high parental investments while children in single mother families have access to the time of only one parent with a bundle of characteristics associated with lower parental investments. Moreover, shifts in the cultural context of parenthood may have been strongest for married-couple, middle-class parents (Coltrane 1996; Hays 1996).

Our decomposition analysis of the time trends suggests that if the only changes between 1965 and 1998 were increased maternal employment and more single parenting, children indeed would be receiving less maternal care and attention than in the past. But the decomposition analysis also highlights that these were not the only things to change between the “familistic” 1960s and the end of the 20th century. Not only did other compositional shifts, such as the increase in educational attainment of mothers, soften the overall negative effect of more maternal employment and single parenting on time with children, but these effects were overwhelmed by behavioral changes. An employed mother in 1998 spent more time with her child than an employed mother in 1965. Similarly, a mother with the same educational level at each time point tended to spend more time in child care activities in 1998 than in 1965.

What we have not done in this study—indeed what we cannot show

with time diary evidence—is examine why these behavioral shifts occurred. Does it make sense that parents would be spending more time with children today than at the height of the baby boom? And if so, what would predispose parents in this direction? As noted at the outset, we can speculate on at least three plausible mechanisms of this behavioral shift.

First, parenting has become more voluntary as fertility control has become more certain and the acceptability of remaining childless has increased (Thornton and Young-DeMarco 2001). One speculation, therefore, is that those who become parents today are “selected” more strongly on the dimension of wanting to spend time parenting than in the past. For an increasing segment of the population, parenthood is not something that “just happens.” Rather it is something one decides to do because one wants the experience of parenting, with all that it entails, including spending large amounts of time with children. Smaller family sizes somewhat reduce how daunting this task is because it takes fewer years to rear one or two children to school age than to do the same for three or four children as was more typical in baby boom families. On the other hand, the expectations for parental investment of both time and money have probably increased insofar as educational expectations for children have risen. As more children attend college, parents “parent” each child for more years.

Second, there may be less sanguine reasons for the increase in time with children than that those “wanting to parent” increasingly become parents. Parents may accompany their children to extracurricular events, supervise play dates, and generally spend more time “hovering” over their children today than in the past because they are afraid not to. Given greater urbanization, with longer distances to be traveled between home, school, and children’s activities and more traffic to be negotiated in covering these distances, and given heightened concerns about crime and child abuse, parents may be increasingly anxious about the safety of their children. Whether real or imagined, these threats to children’s safety predispose in the direction of more direct parental supervision and monitoring than in the past. Visions of neighborhoods full of stay-at-home mothers with children roaming freely from house to house, or yard to yard, in part reflect baby boomers’ nostalgic memories of childhood in the past. Yet it is probably far less common today than in the 1960s to have many adults in the neighborhood who supervise children, their own and others. Children today may be accorded less unsupervised “freedom of movement” than in earlier times because parents fear that harm will come to their children if they are not with them. For example, a trip to the playground may now require, or be thought to require, a parent as guardian to monitor the crossing of streets and generally keep an eye out for unsavory characters. The time diary reports capture this greater parental

involvement, though they miss the time of parents and adults who supervised on an “as needed” basis in the past.

Third, a number of theoretical traditions suggest that as fertility declines each child becomes in some sense “more precious.” Zelizer (1985) traces the historical transformation in the value of children that began in the second half of the 19th century in the United States. Economists discuss the “quantity/quality” trade-off in child rearing. Demographers argue that increased child survival predisposes toward greater investments in fewer children who will now survive to adulthood. As the level of affluence rises, expectations for what children need and for what they can accomplish if only they receive the proper inputs probably increase. Parents may feel increased cultural and normative pressure to provide large amounts of time to children in order to be considered “good parents.” The diary trends may be picking up the parental response to a continued ratcheting up of normative pressures, pressures to be an “involved father” that may have intensified in recent decades and pressures to be a “caring mother” despite being stretched for time because of more market work or more solo parenting.

Finally, parental time with children may have come at a price: that of reduced time in leisure activities. Leisure time is in much shorter supply for parents than for other adults, and parents frequently have children in tow when participating in leisure pursuits (Mattingly and Bianchi 2003). Ethnographic studies of middle-class parents report that attending, supervising, and facilitating children’s activities consumes much of parents’ “leisure” time today (Daly 2001; Lareau 2000). Just as married mothers continue to spend more time in direct child care activities than fathers do, the decline in their free time is larger than for married fathers (Sayer 2002), and more of their leisure may be spent in the service of children (Arendell 2001).

Undeniably, parenting has many rewards. But, it also has costs that in U.S. society today are borne almost exclusively by parents (Coleman 1993; Folbre 1995). One of these costs appears to be less access to leisure. Our investigation of time diary trend data from the mid-1960s to the late 1990s indicates that dramatic changes in the family have not translated into equally dramatic reductions in parental time with children because of compensating shifts in parents’ behavior. Parents may have increased time with children by sacrificing free time. In the context of other research showing increased paid work hours among married couple families (Jacobs and Gerson 2001), our findings suggest it is not surprising that parents often report feeling a time deficit (Milkie et al. 2002). Future work is needed to empirically assess explanations of parents’ shifting time with children and to examine the implications of the time pressures for parental and child well-being.

APPENDIX

TABLE A1
COMPARISON OF METHODOLOGICAL FEATURES OF U.S. NATIONAL TIME DIARY STUDIES

Features	1965	1975	1985	1998
Location	University of Michigan	University of Michigan	University of Maryland	University of Maryland
Funder	NSF	NSF	NSF, AT&T	NSF
Sample <i>N</i>	1,244*	2,406 [†]	5,358 [‡]	1,151 [§]
Age range	19–64	18 and older	12 and older (4,939 18 and older)	18 and older
Mode/response rate (%)	Personal / 72	Personal / 72	Mail back / 51 Telephone / 67 Personal / 60	Telephone / 56
Sample restrictions	Residents of labor force families in nonfarm cities with populations over 30,000 eligible	Excludes households on military bases	All households in contiguous United States eligible	All households in contiguous United States eligible
Months conducted	October–November	October–November	January–December	March 1998–December 1999
Diary type	Tomorrow	Yesterday	Yesterday (<i>N</i> = 1,468) Tomorrow (<i>N</i> = 3,890)	Yesterday
Diary activity file public	No	Yes	No	Yes

NOTE.—Data sources are Converse and Robinson (1980), Juster et al. (1979), Robinson (1997), and Bianchi et al. (2001).

* Includes 760 parents.

[†] Includes 1,519 respondents and 626 parents.

[‡] Includes 1,612 parents; 3,340 responses were collected by mail, 1,210 by telephone, and 808 by personal interview.

[§] Includes 439 parents.

TABLE A2
TIME DIARY QUESTIONS

No.	Question
1	What were you doing [fill in day of week before diary day] at midnight?
2a	Where were you? [for nontravelers]
2b	How were you traveling? [for travelers]
3	What time did you finish [whatever you were doing]?
4	At any time while you were (REPEAT ACTIVITY) did you do anything else? (like talking, reading, watching tv, listening to the radio, eating, or caring for children)
5	While you were (REPEAT ACTIVITY) who was with you?
6	What did you do next?

NOTE.—The source is computer-assisted telephone interview transcript (Bianchi et al. 2001). The interviewer introduced these questions: “Next, I would like to ask you about the things you did yesterday. I want to know only the specific things you did yesterday, not the things you usually do. Let’s start at midnight [fill in day of week before diary day], that is, the night before last.”

TABLE A3
TIME DIARY ACTIVITY CODES

Category	Specific Activity	Category	Specific Activity
Market work	Main job	Education	Attending full-time school
	Unemployment		Other classes
	Second job		Homework
	Work breaks		Other education
	Travel during job		Travel, education
	Travel to and from job		
Housework	Meal preparation	Organizational	Professional and union
	Meal cleanup		Political and civic
	Housecleaning		Volunteer and helping
	Clothes care		Religious groups
	Outdoor chores		Religious practices
	Repairs and maintenance		Other organizational
	Garden and animal care		Travel, organizational
	Other household chores		
Child care	Baby care (children under 5)	Entertainment	Sports events
	Child care (children 5 and over)		Other events
	Helping and teaching		Movies and videos
	Talking or reading		Theatre
	Indoor play		Museums
	Outdoor play		Visiting with others
	Medical care of child		Social gatherings
	Other child care		Bars and lounges
	Travel, child-related activities		Travel, social

TABLE A3 (Continued)

Category	Specific Activity	Category	Specific Activity
Shopping	Shopping for food	Recreation	Active sports
	Shopping for durable goods		Outdoor recreation
	Personal care appointments		Exercise
	Medical appointments		Hobbies
	Government and financial services		Domestic crafts
	Repair services		Art
	Other services		Music, drama, and dance
	Errands		Games
	Travel, shopping, and services		Other recreation
			Travel, recreation
Personal care	Grooming	Communication	Radio
	Medical care		Television
	Care and help of adults		Records or tapes
	Meals		Reading books
	Sleep		Reading magazines, other
	Sex, other private		Reading newspapers
	Travel, personal care		Conversations
			Letter writing
			Thinking or relaxing
	Travel, communication		

NOTE.—The sources used are Converse and Robinson (1980), Juster et al. (1979), Robinson (1997), and Bianchi et al. (2001).

TABLE A4
COMPARISON OF TIME DIARY SAMPLE CHARACTERISTICS WITH MARCH CPS ESTIMATES

	1965		1975		1985		1998	
	Time Diary	CPS	Time Diary	CPS	Time Diary	CPS	Time Diary	CPS
All mothers								
Married .....	.85	.82	.75	.74	.76	.69	.74	.67
No. of children	2.5	2.4	2.2	2.1	1.9	1.8	2.0	1.8
Children under 6 in household .....	.54	.50	.54	.43	.31	.44	.53	.44
Employment status:								
Employed .....	.27	.34	.44	.43	.65	.57	.72	.68
Weekly paid work hours	8.7	11.2	15.5	13.5	24.9	18.5	29.1	22.7
Age category:								
18–24 .....	.18	.19	.12	.21	.10	.18	.10	.14
25–34 .....	.32	.31	.41	.35	.37	.39	.34	.32
35–44 .....	.31	.32	.31	.28	.38	.32	.38	.40
45–54 .....	.17	.15	.15	.14	.10	.09	.15	.12
55–64 .....	.03	.03	.01	.02	.05	.02	.02	.01
Age in years	35.2	34.6	34.6	33.7	35.6	33.2	36.0	34.9
Education:								
High school diploma or less .....	.82	.83	.76	.76	.64	.66	.53	.49
Some college .....	.11	.11	.11	.14	.21	.20	.26	.30

TABLE A4 (Continued)

	1965		1975		1985		1998	
	Time Diary	CPS	Time Diary	CPS	Time Diary	CPS	Time Diary	CPS
College graduate								
plus .....	.07	.07	.13	.09	.15	.14	.21	.21
Weekend .....	.26	NA	.27	NA	.29	NA	.28	NA
N	417	12,091	369	21,030	334	24,920	273	19,098
Married fathers								
No. of children	2.5	2.4	2.3	2.2	2.0	1.9	2.0	1.9
Children under 6 in household .....	.57	.54	.56	.48	.39	.49	.44	.47
Employment status:								
Employed .....	.98	.93	.94	.88	.91	.89	.93	.91
Weekly paid work hours	43.7	41.3	43.5	37.5	43.6	38.9	45.1	40.1
Age category:								
18–24 .....	.08	.07	.09	.07	.05	.05	.04	.03
25–34 .....	.27	.30	.35	.34	.31	.36	.22	.28
35–44 .....	.36	.36	.35	.32	.44	.40	.42	.45
45–54 .....	.23	.22	.16	.21	.15	.16	.26	.21
55–64 .....	.05	.05	.05	.05	.05	.04	.05	.03
Age in years	38.7	38.3	36.9	37.9	39.7	37.3	40.0	38.9
Education:								
High school diploma or less .....	.76	.75	.66	.66	.58	.56	.53	.44
Some college .....	.10	.11	.13	.15	.14	.18	.19	.26
College graduate plus .....	.14	.14	.21	.19	.27	.26	.28	.30
Weekend .....	.32	NA	.25	NA	.30	NA	.27	NA
N	326	9,960	239	15,655	184	17,419	141	12,888

NOTE.—The data sources for the authors' calculations are Converse and Robinson (1980), Juster et al. (1979), Robinson (1997), Bianchi et al. (2001), and March CPS 1962–2001 Files, ver. 5.1, CPS Utilities, Unicon Research Corporation 2002.

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