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Abstract

This paper examines changes in the time American children spent with their parents between 1981 and 1997, and the contribution to these changes of shifting patterns of female labor force participation, family structure, and parental education. Changes are decomposed into the parts attributable to changes in demographic characteristics and parts likely due to changes in behavior. In general, children's time with parents did not decrease over the period, and in two parent families it increased substantially. Population level changes in demographic characteristics were found to have only small direct effects on time children spent with parents.

INTRODUCTION

In the United States today, our societal commitment to the healthy development of children is often disparaged. One common element in many of these complaints is time. The time children spend with parents is thought to be important for their cognitive and social-emotional development, and it is argued by some that increasing extra-familial market activity by mothers and decreasing levels of commitment to traditional family structures by fathers in the U.S. in recent years have hurt children because they have led to decreasing amounts of time spent with parents (Hewlett, 1991; Blankenhorn, 1995).

There are two fundamental problems with this line of reasoning. First, relatively little is actually known about children's time with parents. While there is a substantial amount of research that has examined the time parents spend in paid work and in household work (Robinson & Godbey, 1997), there has been no comprehensive U.S. information on parental investments from the perspective of the individual child which includes both time directly receiving care and time shared with parents while engaging in other activities (Council of Economic Advisers, 1999).

In addition, though recent research examines current investments in children (Hofferth, forthcoming), there is little comparative work across time. Arguments that changes in the percentage of female-headed families in the population and in female labor force participation over time have adversely affected the time children spend with parents are based on the assumption that the relationship between these factors and parents' time allocation has remained constant over time. Without concrete supporting evidence however, this assumption is untenable.

In this paper, we address these issues by examining the relative contributions of shifts in family structure and maternal employment, and non-structural, potentially behavioral, changes to children's weekly time spent with mothers, fathers, and either parent in 1981 and 1997. Using a variety of methods including simple means comparisons, structural decomposition, and regression estimation, we find that though structural effects of increasing single parenthood and maternal labor force participation exist, changes in non-structural components of time use were at least equally, and sometimes more important. As a result, American children spent no less time with parents in 1997 than they did in 1981, and, in two parent families, time with parents has actually increased over the period.

STRUCTURAL VS. BEHAVIORAL CHANGE

Change in Family Structure and Maternal Labor Force Participation

One premise of the argument made by those who believe that the changing structure of American families and the increase in female labor force participation have decreased the time children spend with parents is indisputable. In the past twenty years, the structure of American families has undergone enormous change.

Today it is estimated that two-thirds of first marriages will end in divorce, more than twice as many as two decades ago (Martin & Bumpass, 1989). In addition, almost one-quarter of white and more than half of black children are currently born to unmarried mothers. The consequences of these changes are evident in cross-sectional family statistics. In 1980, 22 percent of children lived with one parent, while today almost 27 percent do (U.S. Bureau of the Census, 1999). The cumulative experience of divorce and single parenthood is even higher than these statistics suggest. According to recent estimates, 60% of children will spend at least part of their childhood with only one parent (Hernandez, 1993).

At the same time, the proportion of women in the paid labor force has increased dramatically in recent decades. While single women have always worked at high levels, married mothers have not. One of the more important elements of this change is the increase in the proportion of married mothers with young children who are employed outside the home. In 1998, 64 percent of U.S. married mothers with a preschool child were in the work force, compared with 42 percent in 1981 (by authors: 1981 Current Population Survey) and only 30 percent in 1970 (U.S. Bureau of the Census, 1999).

Change in Parental Behavior

What the proponents of the structural argument that single parenthood and maternal employment have produced a loss of time with parents neglect, however, is potential change in time allocation within families (Bryant and Zick, 1996b; Bianchi 2000). Such changes may be more or less exogenous to demographic change, related to that change, or some combination of the two. Regardless of maternal work and marital status, mothers and fathers might spend more time with children because of cultural changes in childrearing values emphasizing the importance of child development (Alwin, 1996). Another possibility that has received recent support is that parents in employed-mother and single parent families have changed their behavior to compensate for perceived deficits in children's well being related to their work or family status (Bianchi 2000). On the other hand, it could be argued that, in recent decades, parents might have spent less time with their children because of shifting values emphasizing individualism (Whitehead, 1991).

The foregoing discussion suggests that the possibility of behavioral change needs to be accounted for explicitly in any serious analysis of the effects of structural change. To do so, we need to examine patterns of time allocation within families over time in conjunction with patterns of compositional change in the population.

Children's Time with Parents

While it may seem obvious that children in single-parent families will spend less time with parents (simply because of the lack of a parent) only two recent studies have documented this in detail. One found that young adolescents living with single mothers spent 20 percent fewer daily non-school hours with parents than those living with two parents and that a proportionally greater amount of time spent with mothers in these families did not make up for the lower amount of time spent with fathers (Asmussen and Larsen 1991). Similarly, children under age 13 living with single mothers were found to spend 12 to 14 fewer weekly hours with parents than children living with married parents (Hofferth, forthcoming). Unfortunately, there is no information about the time children spent with single and married parents in earlier periods. Therefore, we are unable to gauge the magnitude of such changes across time, and, thus, the contribution of changing proportions of single parent families in the population to children's time with parents.

The association between female labor force participation and parental time in household work has been widely studied; there is, however, less evidence about its effects on time with children. Research from the early 1980s found that nonworking mothers spent twice the time of employed mothers in activities with preschool children on workdays—a difference of 5 hours (Nock and Kingston 1988). The difference was smaller, about 2 hours per workday, for mothers with only school-age children. Research in 1997 found a 7.5-hour per week difference between the time children under age 13 spent with married mothers in dual-earner and in male breadwinner, female homemaker families (Hofferth, forthcoming). Though such research tends to confirm the negative association between maternal work and children's time with parents, upon further consideration, the relationship may not be so clear-cut.

First, while maternal work outside the home is associated with decreased time mothers spend in traditional childcare activities, one study found it was also associated with increased time mothers were engaged with children in shared housework and leisure activities (Bryant and Zick, 1996a). Second, in the U.S. a substantial minority of dual-earner parents keep their use of non-parental care to a minimum by adjusting their work schedules so that a parent can care for their children when needed. Though none of the above studies found maternal employment associated with more time spent with fathers, this may be partially due to parents' overlapping schedules. About one-third of working parents in two-parent families with a preschool child work different schedules and can share care (Presser, 1989); father participation rises dramatically with the number of non-overlapping hours (Brayfield, 1995). Also, mothers often work hours such that, for school-age children at least, they can be home at the end of the school day. Finally,

the at-home time of stay-at-home mothers does not equal their total time with children, since children and their parent are not always interacting, even if both are at home. Recent research shows only a 3-hour difference between children of employed and non-employed married mothers in the time mothers spent interacting with them in 1997 (Hofferth, forthcoming).

In addition to the ambiguity concerning the cross-sectional effects of maternal work, there is almost no comparative research available to evaluate whether and to what degree changes in children's time with parents are due to changes in female labor force participation rates or to changes in parental behavior. Two exceptions looking at the problem from the perspective of parental time allocation are suggestive, however. One study of parental time in unpaid household work in the United States indicates that mothers' time spent in childcare or playing with children might have increased in the decade between 1975 and 1985, had it not been offset by the increase in female labor force participation in the population in the same period (Gershuny and Robinson, 1988). Another study that addressed the effects of increasing labor force participation on parents' time with children, using historical and contemporary data on married couples from the 1920's to 1980's, concluded that parental time spent in direct childcare activities rose rather than declined over the period, in spite of increased maternal employment (Bryant and Zick 1996b). Because the sample was restricted to married families, however, this latter study could not gauge the effects of increasing rates of single parenthood. Perhaps more importantly, both studies are of limited value in addressing the present question because of their exclusive focus on direct care activities rather than total time with parents, the lack of time use data from recent years, and the fact that they do not address time with parents from the perspective of children.

Educational Attainment and Family Size

Though the principal goal of this paper is to analyze the effects of changes in rates of single parenthood and women's labor force participation on children's time with parents, in doing so it is important to also take into account two other major changes in American families which may have influenced children's time with parents.

The first is the change in the educational attainment of mothers. While in 1950 only about 5% of American mothers with children under 12 years of age had completed four years of college, in 1980 over 12% had, and by 1990, this figure had increased to slightly over 18%.¹ Besides monetary advantages, education affects the values, knowledge, experience, and aspirations that parents bring to childrearing. Thus since education and labor force participation may be associated, changing levels of education may offset the simple independent effect of rising female labor force participation. Previous research has shown that better-educated mothers invest more heavily in their children by spending more time with them in educational activities (Leibowitz, 1974).

Secondly, the number of children born to the average woman has declined substantially in the last half century. Each woman born after 1945 is expected to bear about two children by the time she completes childbearing (U.S. Bureau of the Census, 1984; U.S. Bureau of the Census, 1988). In contrast, the average woman born between 1930 and 1939 had about three children. Most studies have found that the time parents spend with any given child declines as the number of children in the family increases (for a summary, see Bryant and Zick, 1996b). On the other hand, having fewer children may mean that mothers and fathers spend less time at home and, therefore, less time with any individual child.

In the following analyses, changes in the educational attainment of mothers are included in structural decompositions of children's time with parents, both independently and in conjunction with changes in family structure and maternal labor force participation. We also control for the potential impact of changing numbers of children in families over time in the final section of the paper, using multivariate analyses.

¹ Estimates compiled by authors, using historical census data from the IPUMS extraction system. Steven Ruggles and Matthew Sobek et. al. *Integrated Public Use Microdata Series: Version 2.0* Minneapolis: Historical Census Projects, University of Minnesota, 1997 (<http://www.ipums.umn.edu>).

METHODS AND DATA

The measurement of children's time is an issue that a number of researchers have wrestled with. In this section we discuss measurement issues, then describe the two sources of national information on children's time used in this analysis.

Measurement of Children's Time with Parents

The most accurate way to assess what activities children engage in and how much time they spend in each would be observation. However, such methods are costly, intrusive, and limited in the amount of any particular day that can be covered. Another accurate way to collect information is by time sampling, in which respondents write down the activity they are engaged in whenever a beeper sounds, or some other sampling device is triggered. This methodology is also costly and intrusive. The most common method in survey research is to ask parents directly how much time they spend in certain activities, such as reading to their child. While simple and widely used, this so-called 'stylized' method is known to be biased, and has been proven to be quite inaccurate in some cases (Juster & Stafford, 1985; Marini & Shelton, 1993). In contrast, substantial methodological work has established the validity and reliability of data collected in time-diary form (Juster & Stafford, 1985).

Data for this study on children's time with parents come from 24-hour time diaries collected in two surveys of the American population—the 1997 *Child Development Supplement* to the *Panel Study of Income Dynamics*—and a small 1981 follow-up to the 1976-77 *Study of Time Use in Social and Economic Accounts—The Time Use Longitudinal Panel Study, 1975-1981*.² Both studies were conducted by the University of Michigan using a similar methodology. The time diaries for both 1981 and 1997 asked about the child's flow of activities over a 24-hour period beginning at midnight of the designated day. Respondents were asked to give detailed information concerning each activity engaged in, when it began and ended, with whom the child did it, and what activity came next.

Prior to 1997, the *Time Use Longitudinal Panel Study, 1975-1981* contained the only nationally representative data on U.S. children's time use available (Timmer, Eccles & O'Brien, 1985). In each family sampled, time diary data were collected for the head of household, for their spouse, if present, and up to 3 children aged 3-17 years old. Adults were interviewed up to 4 times, but for most children only 2 time diaries, one for a school day and one for a non-school-day, were obtained. Many studies continue to utilize statistics generated by this study for lack of a recent alternative (Task Force on Youth Development and Community Programs, 1992). Until 1997 no national time diary data were available to document changes since 1981, though results of a California study have been reported (Bianchi & Robinson, 1997).

The Panel Study of Income Dynamics (PSID) is a longitudinal survey of a representative sample of U.S. men, women, children, and the families in which they reside. The sample is self-replacing, since children and other sample members become respondents in their own right when they leave the original household. In 1997, the PSID added a refresher sample of immigrants to the United States (since 1968) so that the sample represents the U.S. population in 1997. When weights are used, the PSID has been found to be representative of U.S. individuals and their families (Fitzgerald, Gottschalk & Moffitt, 1998a).

² *Time Use Longitudinal Panel Study, 1975-1981*; data originally collected by F. Thomas Juster, Martha S. Hill, Frank P. Stafford, and Jacquelyn Eccles Parson of the Survey Research Center, Institute for Social Research. Additional data used in analyses come from the *Current Population Survey, March 1981*, originally collected by the U.S. Dept. of Commerce, Bureau of the Census. Data from both studies was furnished by the Inter-university Consortium for Political and Social Research. ICPSR studies #9054 and #8269, respectively. Neither the collectors of the original data nor the Consortium bear any responsibility for the analyses or interpretations presented here.

In 1997, information was collected on up to two randomly selected 0-12-year-old children of PSID respondents both from the primary caregiver and from the children themselves. This *Child Development Supplement* (CDS) completed interviews with 2,380 households and about 3,563 children. The response rate was 90% for those families regularly interviewed in the core PSID and 84% for those contacted the first time this year for the immigrant refresher to the sample. The combined response rate for both groups was 88%. Of principle importance to this research, time diaries for one weekend day and one weekday were collected from about 2,900 children.

For comparative purposes, the analytic child samples used in this paper were restricted to children aged 3-12 years old for whom both weekend and weekday diary data are available, and who are sons or daughters of the head or wife of the household from which they were sampled.

For the 1981 data we use a sample of 243 children meeting these criteria. Individual child records were weighted by the product of the 1981 sample attrition weight (which adjusts the sample for loss of respondents from the 1975-1976 study), a post-stratification factor (taking into account maternal work status and number of parents in the household) derived from comparison to the March 1981 Current Population Survey, and a sub-selection weight that adjusts for the probability that a child in a given household was sampled in addition to non-response among sampled children.

For the 1997 PSID-CDS, the sub-sample of 2,125 children aged 3-12 years old is weighted by the product of the core PSID family weight, a post-stratification factor (by race and education of household head) based on comparison to the 1997 Current Population Survey, and a sub-selection weight that adjusts for the probability that a child in a given household was sampled and for non-response of sampled children.

In the PSID-CDS time diaries, children's activities can be classified according to whether a parent did the activity with the child or was simply present. In 1981, this distinction between engaged time and time accessible to, but not engaged with children was not made. In light of this limitation in the 1981 data and because the amount of time children spend simply in the presence of a parent may have important consequences for their development, for the present comparative analysis we measure the total time children spent with parents either engaged or accessible to them. For both samples, measurement of time parents (including non-custodial parents) are either engaged or accessible to children is aggregated from the individual daily child time diaries and imputed to the week by multiplying the weekday totals by 5 and the weekend day totals by 2.³

Children experience parental time and attention differently, and individual experiences with parents may be important to their later development. Because of this important reality and because of the sampling scheme employed in the data collection, this study focuses on an individual child's time with the mother, the father, or either parent (which encompasses time spent separately with mothers, with fathers, and time spent with both).

Measurement of the Demographic and Control Variables

The demographic variables of primary importance to the analysis of the effects of changes in population structure on children's time with parents are family type and maternal employment status. We also consider changes in parental education and the number of children in the family. Several family-level variables that we do not address substantively in the paper but which have been found to have potentially important effects on children's time with parents include household income, weekly hours worked by fathers and mothers, the race and age of the parents, and age of the youngest child in the family (Bryant and Zick, 1996a; Hofferth, forthcoming; Nock and Kingston, 1988). These are included in the multivariate analyses as controls. Similarly, on the child level, important differences in children's time with parents have been found to be associated with the gender and age of the child (Bryant and Zick,

³ While having only two days and not an entire week is a disadvantage, analyses conducted by the authors indicate that the weekly time imputation used is valid due to a general lack of significant differences in time children spent with parents across weekdays or weekend days in 1981 or 1997.

1996a; Harris and Morgan, 1991; Hofferth, forthcoming; Nock and Kingston 1988) and these are also included as controls.

Age of parents (in years), family income (in tens of thousands of dollars), number of children, and age of youngest child in the family are measured continuously. The other variables are categorical. Race is a binary indicator taking the value of one if the child is non-Hispanic Black, and 0 otherwise. Gender is also dichotomous, with 0 indicating male and 1 indicating female. Maternal employment is categorized two ways, first, as a working/not working dichotomy, and, second, in the regression analyses as not working, working part time (less than 35 hours per week), and working full time (35 or more hours a week).⁴ Not working is the reference category for both variables. Parents' education is coded dichotomously—0 represents less than 4 years of college, and 1 represents completion of at least 4 years of college or a 4-year degree. Finally, family type is also measured with an indicator variable representing two parent and single mother families, with the former being the reference category.

Table 1 presents sample characteristics across the key demographic dimensions under investigation here for the 1981 and 1997 samples and, for comparative purposes, the March 1981 Current Population Survey. Although point estimates for all of these variables in the 1981 sample do not exactly match those from the CPS of the same year, they are reasonably close. In our 1981 analytic sample, a slightly higher percentage of children have mothers with 4 years of college than in the CPS, and the average number of children in a given child's household is also slightly higher.

Analysis Plan

Our analysis first describes children's time with mothers, fathers, or either parent in 1981 and 1997. The latter element, time with either parent, is seldom considered in analyses of children's time, but is important if simply the presence of a parent, rather than one of a particular gender, is thought to be significant, and if, as some research noted above indicates, mothers and fathers adjust their time allocation to maximize the time at least one parent spends with the children. Differences between children's time with parents in two-parent and single-parent families, and between families in which mothers work and those in which they do not are also shown. We also discuss differences in children's time with parents by maternal educational attainment.

Next, we conduct a series of simple shift-share analyses in which we standardize estimates of change in time children in the U.S. spent with parents between 1981 and 1997 by rates of single parenthood, maternal labor force participation, and education. This allows us to decompose changes in children's time with parents into elements that can be accounted for by changes in these population level variables, and those which cannot, but which may be attributable to behavioral changes.

Finally, we regress children's time with parents in 1997 on the analytic and control variables. We use the estimates derived from these models to make counterfactual predictions about children's time with parents based on 1981 demographic data. These predictions are then compared to actual 1981 and 1997 sample estimates, providing a method of discerning amounts of change due to demographic and other factors, adjusting for multiple aspects of compositional change simultaneously.

It should be noted that we address the potential influence of non-independence of observations within families by using in all bivariate tests as well as in the regression analysis design-adjusted variance estimates as implemented in the complex survey data component Stata 6.0, specifying the child's family as the primary sampling unit. These variance adjustments, though minor, are appropriate for analyses where there is non-independence across observations (Skinner and Smith 1989; Binder 1983).

⁴ For 1981 work status and weekly hours worked were obtained at the time of the survey. For 1997, though work status is taken at the time of the survey, because work hours were not collected in the PSID-CDS and are not yet available for 1997 from the core PSID, average weekly hours worked in the previous year are used as a proxy in combination with current work status to construct the maternal part-time/full time measure.

RESULTS

Bivariate Relationships: Children's Time with Parents in 1997 and 1981

Figure 1 describes children's mean weekly time with mothers, fathers, or either parent in 1981 and 1997 across all family types.⁵ Children aged 3-12 spent about 4.3 more hours with mothers in 1997 (about 28.6 hours) than they did in 1981 (about 24.3 hours; $p=.000$). There was also a marginally significant increase in time children spent with their fathers over the period (from about 15.6 hours per week in 1981 to 18.6 hours per week in 1997, $p=.084$). In contrast, there was no significant difference in time spent with either parent (about 30 hours) in 1997 compared to 1981.

Family Structure

This apparent similarity may be real, or it may reflect a combination of offsetting structural and non-structural effects on children's time with parents. To investigate this possibility, Figure 2 re-estimates children's mean time with parents, eliminating the potential effects of single parenthood by restricting the analysis to two-parent families.

From this chart we see that the increase in children's time with mothers over the period (about 5.8 hours) is more pronounced in two-parent families ($p=.000$) than in all families.⁶ Children from two parent families also spent significantly more time with their fathers each week (4.2 hours) in 1997 than in 1981 ($p=.003$). This indicates that the similarity of time children spent with their fathers in all families between 1981 and 1997 may be due at least in part to the negative effect of increasing single parenthood offsetting the increased time with fathers in two-parent families. One of the more interesting results shown in this graph is that, although the time children spent with mothers or with fathers in two parent families increased substantially, the increase in time spent with either parent was relatively small, and statistically insignificant. This suggests that the amount of time children have both parents accessible to them at the same time may have increased between 1981 and 1997.

Turning directly to the question of the effect of family structure on children's time with mothers (analysis not shown), we find that in 1981, children in two-parent families spent more time with their mothers (about 25 hours) than children in families with single mothers (about 21 hours). This difference is marginally significant ($p=.081$), which is impressive given the small number of children in single-mother families ($N=43$) in our 1981 sample. This difference is more pronounced in 1997 (about 31 hours per week with mothers in two parent families vs. 21 hours per week with single mothers), and highly significant ($p=.000$). These results, combined with those presented previously in figure 2 indicate that though time spent with mothers in two-parent families increased over the period, time with mothers in single-parent families remained more or less constant. This is borne out by formal tests of the means; children in single-mother families did not spend significantly more or less time with their mothers in 1997 than in 1981.

Maternal Labor Force Participation

To examine how children's time with parents may have changed over the period in relation to changes in mothers' labor force participation, Figure 3 presents children's mean time with mothers in both periods, by whether the mother was working or not.

[Figure 3 about here]

⁵ Cases with extreme or implausible combinations of values for children's time with parents were removed from all of the following analyses. A complete description of criteria used for removal is available from the corresponding author on request.

⁶ And by implication, the difference over time in two parent families is greater than that in single parent families. In fact, there is no significant difference between the two years in the amount of time children in single parent families spent with mothers, fathers or either parent.

In 1981 children in the U.S. spent, on average, 3.5 fewer hours per week with mothers who worked than with mothers who did not, while in 1997 the difference was about 5.5 hours. This difference is marginally significant for 1981 ($p=.126$), but highly significant for 1997 ($p=.000$). The apparent increase in the negative effect of maternal labor force participation over the period appears to be due to the relatively large increase in the amount of time children spent with non-working mothers. In fact, making the comparison across time and within work status, it is obvious that children spent more time with both working and non-working mothers in 1997 compared to 1981. Children spent about 6 hours more per week in 1997 with non-working mothers ($p=.007$), and about 4 hours more per week with working mothers ($p=.083$) than in 1981. As a result of this general increase, children from working-mother families in 1997 spent about the same amount of time with their mothers, on average, as did children in non-working mother families in 1981 ($p=.817$).

To address how children's time with their fathers is affected by maternal labor force participation and if this relationship changed over the period covered by the analysis, Figure 4 shows mean children's time spent each week with fathers in two-parent families in 1981 and 1997 by maternal work status. Comparison of the estimates indicates that there is no significant difference in the time children spend with their fathers in two-parent families, on average, when mothers work and when they do not in either 1981 or 1997. It should be noted, however, that the differences are in opposite directions; children spent less time on average with fathers in 1981, and slightly more time with fathers in 1997 when mothers were working compared to when they were not. To assess whether this relationship between maternal work and time with fathers has changed, we again need to make across-time comparisons. Although the time children spent with fathers in families with non-working mothers is not significantly different across the two years, children did spend significantly more time (about 6 hours per week more) with their fathers in families in which the mother worked in 1997 compared to 1981 ($p=.000$). Thus, in the bivariate results, it appears that fathers may have taken more responsibility for childcare when mothers worked in 1997 compared to 1981.

We also found that in two-parent families in both years, children spent less time per week on average with either parent when their mothers were working compared to when they were not (about 6.4 hours less in 1981, $p=.020$ and 3.6 hours less in 1997 $p=.006$; analysis not shown). No significant changes occurred in time spent with either parent within families of either working or non-working mothers across time.

Maternal Education

Though not shown graphically, the time children spent with mothers appears to be higher in 1997 relative to 1981 regardless of whether mothers had a college degree or not, especially in two parent families. Across all families, children whose mothers did not have a college degree spent about 4 hours more per week with them in 1997 than in 1981 ($p=.002$), as did children whose mothers had a degree, though this latter result is not statistically significant. In two parent families, these differences are more pronounced; children spent about 5.5 hours more per week with mothers who did not have a degree ($p=.001$) and almost 7 hours more with mothers who did ($p=.047$) in 1997 compared to 1981. It also appears that in both years looking at all families and at two-parent families that children spent more time with mothers who held a degree than mothers who did not (between 1-3 hours more), but perhaps because of the small sample size in 1981 this difference is only significant for 1997 ($p=.015$ considering all families, $p=.083$ for two parent families alone).

The situation with regards to differences in time children spent with fathers is somewhat more complex. Across all families, while there is no significant difference in time children spent with fathers in 1981 compared to 1997 when mothers did not have a college degree, they did spend more time with fathers in the latter year relative to the former (by about 8 hours) when mothers held a degree ($p=.002$). In addition, again across all families, children whose mothers had a degree spent about 4.5 hours more per week with their fathers in 1997 than children whose mothers did not have a degree ($p=.000$). There is, however, no significant difference in time with fathers by maternal education in 1981. In two parent

families considered by themselves, the results with regards to time with fathers by maternal education are similar to those concerning time with mothers, with the exception that there is no significant difference by maternal degree status in either 1997 or 1981.

The only significant difference by maternal degree status in the amount of time children spent with either parent was in 1997, with children across all family types spending about 3 hours more ($p=.012$) and children in two-parent families about 2 hours more per week ($p=.085$) with either parent when their mothers held a degree.

Standardization of 1997 Estimates of Time Use to 1981 Demographic Rates

The next step in the analysis is to decompose the estimated change in children's time with parents between 1981 and 1997 by rates of maternal labor force participation (working/not working), family structure (single parent/two parent), and maternal education (4 years of college/less than 4 years of college). This common standardization procedure, also called 'shift-share' analysis (Gershuny & Robinson 1988; Williams 1991), decomposes the change in estimates over time into parts attributable to changes in the structural composition of the population under analysis, those which are not (perhaps attributable to behavioral change), and the interaction of the two (a measure of the difference in the effects of non-structural changes between the structural categories).

The decomposition equation used in this analysis is as follows:

$$\bar{t}_2 - \bar{t}_1 = \sum_i P_{i1}(\bar{t}_{i2} - \bar{t}_{i1}) + \sum_i \bar{t}_{i1}(P_{i2} - P_{i1}) + \sum_i (P_{i1} - P_{i2})(\bar{t}_{i1} - \bar{t}_{i2})$$

Where \bar{t} is estimated mean time with parents, P is the estimated proportion of the population in category i , and the numeric subscripts indicate the year.⁷

The first term on the right side of the equation represents the contribution of non-structural change, the second, the difference in the estimates purely attributable to the structural changes, and the third, the interaction term.

Structural vs. Non-Structural Effects: All Families

Table 2 presents the change between the two years in the time children spent with parents across all types of families decomposed into structural elements attributable to changes in family structure, maternal labor force participation, and maternal education, to non-structural elements, and to the interaction between the two using both 1997 and 1981 as the base year.⁸

Family Structure. As expected, the increase in the percentage of single parent families in the population between the two years (columns 5 and 6) has a negative independent structural effect overall on the time children spent with their parents; in isolation, this change implies children would have spent between 0.12 and 0.3 fewer hours each week with mothers, about 1/2 an hour less with fathers, and about 1/3 an hour less with either parent. That children's time with mothers and fathers did not decrease over

⁷ Estimates of children's time with parents in both years are taken from the time use surveys described earlier. Population proportions in each category for 1997 are taken from the PSID-CDS, the proportions for 1981 are taken from the 1981 CPS due to the slight differences between this source and the 1981 sample.

⁸ When the interaction term is large relative to another component the amount of change clearly attributable to either structural and nonstructural elements may not be stable when the base year (t_2 in equation 1) is switched, obscuring conclusions about the relative independent impact of each component of change. For this reason, the standardizations are presented with both 1997 and 1981 as the base year. The reader should keep in mind that the signs for each component presented will, in most cases, be opposite for estimates using the two base years. For example, if children's time with parents increased between 1981 and 1997 (as it did in most cases), the sign for total change will be *positive* using 1997 as the base year, and *negative* using 1981 as the base year.

the period, but actually increased, points to a more-than-compensating non-structural increase (about 4.5 hours for time with mothers and about 3.7 hours for time with fathers). Though the compensating effect of non-structural increases in time children spent with either parent was not as large as for each parent separately, it was large enough to fully offset the negative structural effect.

Maternal Labor Force Participation. The independent structural effect of increasing maternal labor force participation on children's time with mothers is also negative and somewhat stronger than that associated with the change in the rate of single parenthood, though still slight. In isolation the change in the proportion of children whose mothers were working would have resulted in children spending between $\frac{1}{2}$ and $\frac{3}{4}$ of an hour less with mothers in 1997 than in 1981 (columns 1 and 2). This effect is however offset by a large non-structural (or behavioral) effect. Contrary to expectations from the results of the previous section, the structural effect of increasing levels of maternal work on the time children spent with fathers was negative, though also small. Maternal work status has the strongest independent negative structural effect on time children spent with either parent, but this was completely offset by a positive, potentially behavioral increase.⁹

Maternal Education. The direct structural effects of increasing proportions of mothers with a college degree in the population, though not the primary focus of this paper, are important to consider in this context because of their potential behavioral correlates and relation to rates of maternal labor force participation. The effect on time with mothers is, as expected, positive, but minor (columns 3-4). The structural effect of increasing levels of maternal education on time children spent with either parent is also positive, though again small. The direction of the structural effect on time with fathers here is indeterminate (the parameters for the structural element are negative in both base years). The interactions for time with fathers and either parent are relatively large in comparison to the main effects, but are most pronounced for time children spent with fathers. This may reflect positive behavioral changes on the part of fathers due to changes in levels of maternal education, or equally likely, their own.

Looking at the combined effects of changes in maternal labor force participation and education (columns 9-10), it appears that the positive structural effects of increasing maternal education on time spent with mothers and either parent may have somewhat offset the negative effects of simultaneous increases in the the proportion of mothers working outside the home.

Structural vs. non-structural effects: two parent families

Though decomposing change due to structural and non-structural elements in the total population is informative, interpretation of the effects may be clouded by considering all family types together. Next, we examine changes in children's time with parents apart from changes in family structure by looking separately at two-parent families. Table 3 decomposes changes in children's time with parents in these families into structural effects stemming from changing maternal labor force participation and education, non-structural effects, and the interaction between these two elements.

Maternal Labor Force Participation. For children in two-parent families, the expected structural effect of increasing female labor force participation (columns 1 and 2) is, as over all families, to reduce the average time children spend with their mothers or either parent. These effects, which are quite small (with implied decreases of about $\frac{2}{3}$ of an hour per week), are offset by positive non-structural change, which is much larger than when looking at all families combined. This suggests, in comparison to previous results across all families, that children in single parent families perhaps did not benefit to the same extent as children in two-parent families from behaviorally influenced increases in time with mothers or either parent over the period. The implication is that single parenthood constrains the time

⁹ In light of the fact that the decompositions of maternal labor force and family structure may be biased by the higher likelihood that a single mother will be in the labor force, a decomposition using the combined distribution of these two variables is presented in columns 7-8. For time with mothers, fathers and with either parent the combined structural effects seem more or less additive.

children spend with mothers in ways not related to simply whether they are working or not, such as through scheduling constraints in time at work, which two-parent families may experience to a lesser degree. The direction of the structural effect of increased maternal labor force participation on time spent with fathers cannot be assigned because of the relatively large interaction effect.

Maternal Education. The effects of increasing proportions of mothers in two-parent families with a college degree between the two years, was again positive but slight, and the structural effect on changes in time children spent with fathers or either parent is indeterminate. As in suggested in the results for all families, looking at the joint decomposition of changes in education and labor force participation (columns 5 and 6), increasing rates of female education appear to have somewhat offset the negative effect of increasing maternal labor force participation on children's time with mothers.

Predictions Based on Regression Estimates

For the final analysis, we use estimates derived from OLS regressions of children's time with mothers, fathers, and either parent in 1997 to make counterfactual predictions about what children's time with parents across all family types would have been like in 1997, had behavior been the same but the population still had the same key demographic characteristics as in 1981. Using predicted children's times with parents from these models, under the assumption of no demographic change between 1981 and 1997 in comparison to actual estimates in both years is analogous to the simple standardization exercise presented previously. The advantage is that now we can estimate the net structural effects of changes in all the demographic variables of interest (including changes in the number of children in the family), while controlling for relevant background variables. The results of these models are presented in Table 4. The means and standard deviations for the variables included in each of the models are presented in Appendix Table 1.

As expected, across all families, children's time in 1997 with mothers, fathers, or either parent is strongly reduced by living with a single parent. While the coefficients for both part-time and full-time maternal work are negative in the model for time children spend with their mothers, only the latter is significant, and the effect is quite large. Under this model, children spend about $5\frac{3}{4}$ fewer hours each week with mothers working full time than with mothers who did not work at all, net of other factors. This effect is similar for time children spend with either parent, though somewhat smaller in magnitude. For time children spend with fathers, though the coefficient for part-time maternal work is again negative, the coefficient for full-time work is slightly positive; neither is statistically significant, however. The coefficients for maternal education and education of the household head in the models of children's time with mothers and fathers were positive, though again not significant. Education of the household head, however, does have a significant effect on time children spent with either parent, with children from families in which the head of the household had four years or more of college spending about 3.4 hours per week on average with at least one of their parents than children in families in which the head of the household did not. Each additional child in the family is estimated in all 3 models to slightly increase time any given child (other things being equal) spends with their mother or either parent, but none of the coefficients is significantly different from 0.

Counterfactual Estimates

Figure 5 presents children's weekly time with mothers, fathers, and either parent across all family types. The chart contains 3 estimates for each category of time use. The first and second bars in each category are the sample estimates from the 1981 and 1997 data, respectively, which we have seen before. The third bar in each group is the predicted estimate for 1997, holding rates of single parenthood, female labor force participation, maternal education and the mean number of children in families constant at

1981 levels, as derived from the CPS child-based file.¹⁰ The differences between the actual 1981 estimates and the 1997 estimates adjusted for 1981 demographics represent non-structural, potentially behavioral, change. The differences between the actual and adjusted 1997 estimates provide a measure of change attributable to shifts in the demographic variables under consideration, under the assumption that the 1997 regression models would have held if these characteristics had not changed.¹¹

The chart indicates that the combined changes in the demographic structure of the population as modeled would have been associated with slight decreases of less than 1 hour in children's weekly time with both mothers, fathers, and either parent. For time with mothers, this decrease was, as in the standardization analysis, offset by more than compensating non-structural, or behavioral change of approximately 5 hours, leading to the net increase of about 4.3 hours. All structural changes considered together would imply only a slight decrease in the average amount of time children spent with their fathers in the population as a whole, which is offset by a non-structural increase. The situation is the same with regard to time with either parent, but the compensating effect of behavioral change is not as large as that seen considering time with mothers or fathers separately. One could argue that this negligible effect of combined structural change across the dimensions under consideration may be the result of the positive effects of increasing maternal/head education offsetting the negative aspects of change associated with increased single parenthood and maternal labor force participation. Though true, eliminating educational change from these models results in an almost trivial increase in the combined structural effect, of 0.1 and 0.2 hours for the models of time with mothers and fathers, respectively, and 0.3 hours for time with either parent.

In two-parent families (analysis not shown) the predominance of behavioral effects on children's time use is more pronounced. Consistent with our decomposition results presented earlier, little of the change in children's time with mothers, and virtually none of the change in time with fathers or either parent in two parent families is attributable to the combined shifts in education, maternal employment, or family size.

SUMMARY AND CONCLUSIONS

This paper has attempted to separate the differences between 1981 and 1997 in the time children spent with parents due to changes in structural factors such as rates of single parenthood, maternal employment, maternal education, and family size from those due to non-structural or behavioral changes among families with similar characteristics.

American families have experienced dramatic changes over the past two decades. The increases in percentages of families headed by single parents and families in which both parents work are well documented. We found that, overall, American children spent more time with their mothers and no less time with their fathers or either parent in 1997 than they did 16 years earlier, and that, contrary to popular belief, structural changes in the population have not diminished the time children in the U.S. spend with their parents.

¹⁰ These estimates were also prepared using sample estimates from the 1981 Time Use Longitudinal Panel Study data, and results were nearly identical. Since there are some biases in this small sample, however, the CPS estimates were used.

¹¹ Two questions need to be addressed here. First, it could be argued that some of the change presented here as non-structural may in fact be due to changing characteristics of the population other than the four under analysis here, and to a certain extent this is possible. In all cases in Figure 5, estimates of structural change due to changes in the control variables are almost 0, and when they are not, their effects were to mute total structural change (analysis not shown). As such, the results presented are *conservative* estimates of non-structural change. Second, differences between the counterfactual 1997 estimates and the actual sample estimates will necessarily also include the behavioral/structural interaction component seen in the standardization analyses. Results from that section suggest that these effects are generally small.

Though the effects of changes in family structure as measured by rates of single parenthood and maternal labor force participation were indeed negative, they were in all instances quite small. The effects of structural changes in maternal education, which had a positive impact on children's time with parents, were also found to be negligible.

Using several different methodologies, this research finds that, across all families considered together, behavioral changes generally outweighed the effects of changing demographics. Without such behavioral change, it is possible that children would have spent less time with mothers, fathers or either parent in 1997 compared to 1981.

The overall picture presented by analyses including all family types is somewhat misleading, however. Though the most important structural factor affecting children's time with parents in the population as a whole between the two years was the increase in rates of female labor force participation rather than the increase in percentages of children living in single parent families, the most important static factor affecting the time children spent with parents in both years was living in a family with a single parent. While there have been positive and dramatic increases in children's time with mothers, fathers, and both parents in two-parent families, these are not paralleled for children in single-parent families. Whereas parents may be able to make up for time with children lost due to maternal employment, they cannot compensate for the absence of a parent in the home. That said, we found that children living in single-parent households in 1997 did not spend any less time with parents than such children did in 1981, all else being equal.

Because of the strong effect of single parenthood on our estimates for the entire population, we examined two parent families separately. The behavioral increases over the period for mothers, fathers, and either parent are, as noted above, highly pronounced in these families. The minor structural effects of increased female labor force participation were completely offset by large, non-structural (most likely behavioral) increases in time children spend with their parents. Time with mothers in two-parent families generally increased over the period, regardless of whether mothers were working or not, but time with fathers only increased significantly in families in which mothers were working.

We believe these analyses have shown to be largely unfounded assertions that children spend less time with parents today than several decades ago because of changes in maternal labor market behavior and in patterns of family formation and dissolution.

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Figure 1.
Childrens' Mean Time with Parents in all Family
Types, by Year

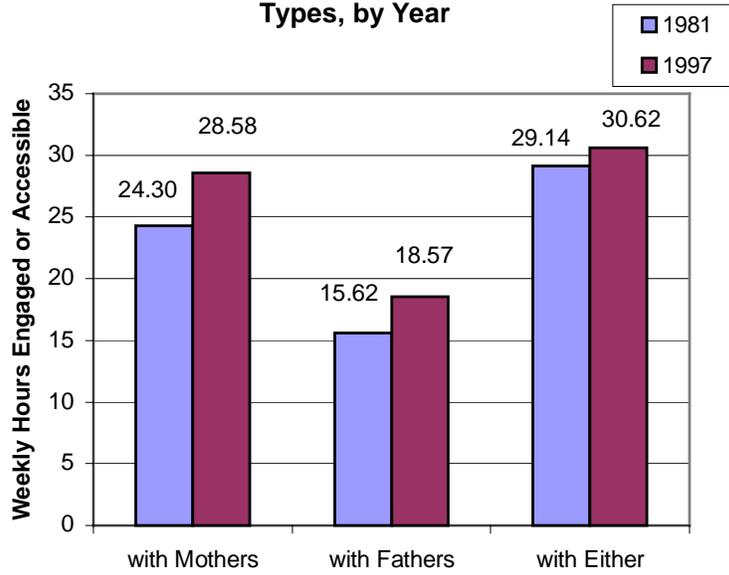
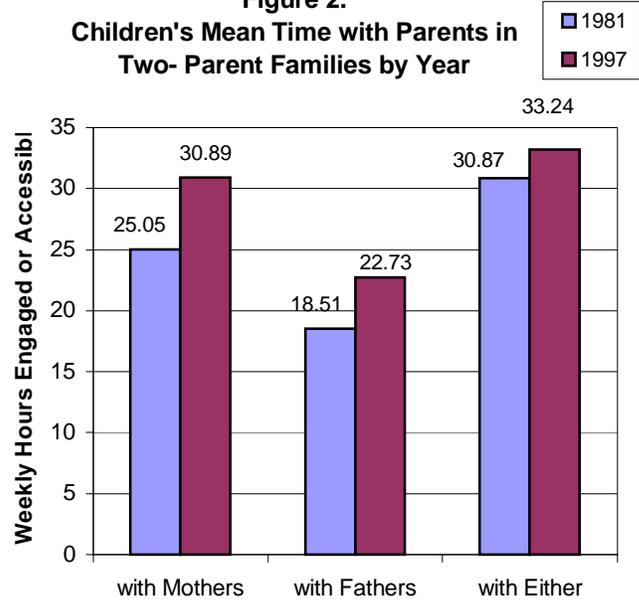
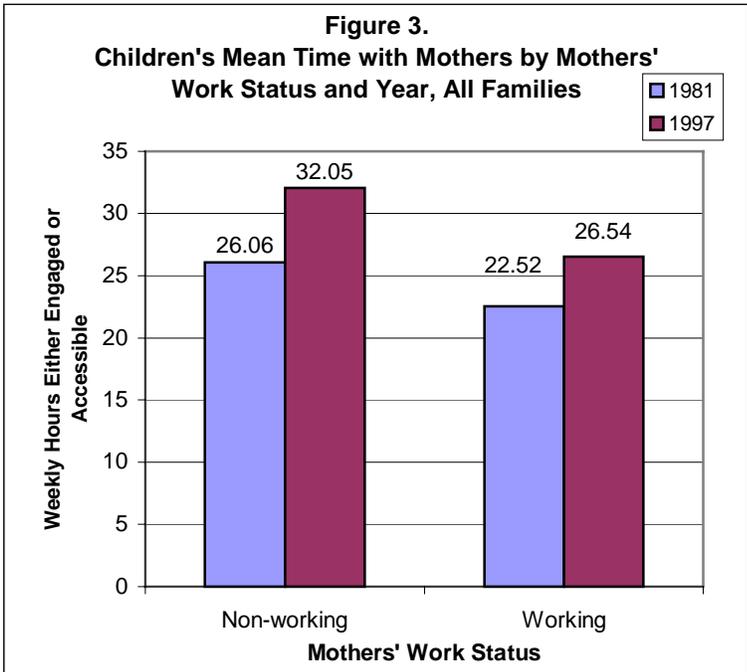


Figure 2.
Children's Mean Time with Parents in
Two- Parent Families by Year





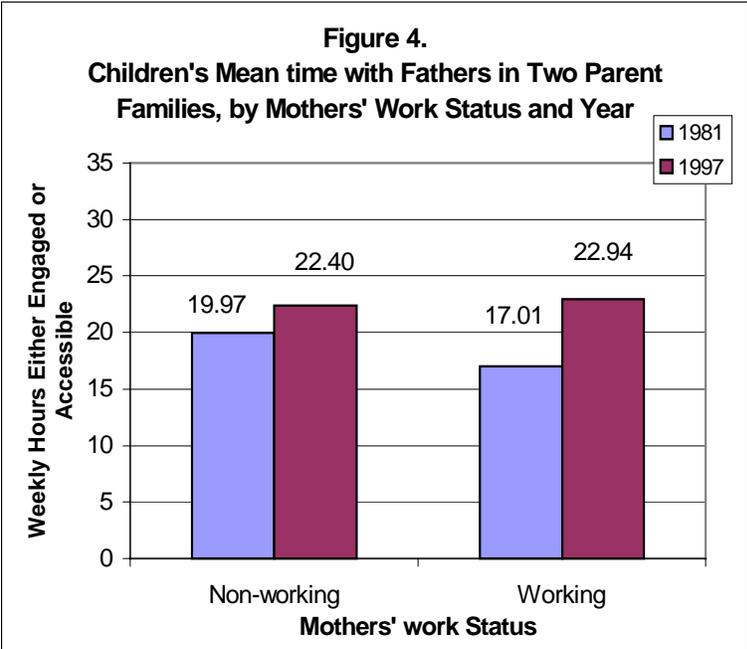


Figure 5.
Comparison of Children's Mean Time
with Parents in All Families by Year
and Demographic Structure

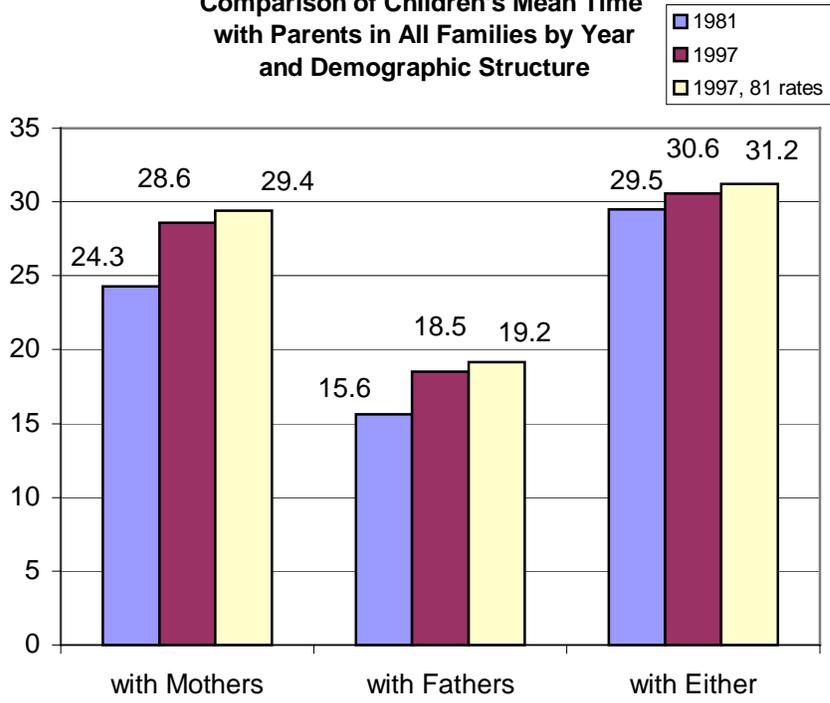


Table 1. Sample Characteristics of U.S. Children's Families Across Key Demographic Variables

	'81 CPS	'81 Sample	'97 CDS
Maternal Labor Force Participation	50%	50%	63%
Maternal college degree	13%	14%	23%
Single mother families	18%	18%	22%
Number of children in the household	2.7	3.1	2.5

Source: compiled by authors. Data from *Current Population Survey, March 1981, Time Use in Economic and Social Accounts, 1975-1976*, and the *1997 Child Development Supplement to the Panel Study of Income Dynamics*.

Table 2. Decomposition of Structural and Behavioral Elements of Changes in Estimates of Children's Weekly Mean Time (in hours) with Parents in All Families, 1981-1997

		Maternal Labor Force Participation		Maternal education		Family Structure		Maternal Labor Force Participation and Family Structure		Maternal Labor Force Participation and Maternal Education	
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Base Year		Base Year		Base Year		Base Year		Base Year	
		1997	1981	1997	1981	1997	1981	1997	1981	1997	1981
with Mothers	Behavioral	5.00	-4.74	4.02	-4.07	4.64	-4.46	5.31	-4.75	4.73	-4.40
	Structural	-0.46	0.71	0.27	-0.32	-0.12	0.30	-0.48	1.04	-0.12	0.45
	Interaction	-0.25	-0.25	0.04	0.04	-0.18	-0.18	-0.56	-0.56	-0.33	-0.33
	Total*	4.29	-4.29	4.34	-4.34	4.34	-4.34	4.27	-4.27	4.28	-4.28
with Fathers	Behavioral	3.09	-3.35	2.49	-3.18	3.72	-3.64	3.74	-3.96	2.62	-3.36
	Structural	-0.39	0.13	-0.22	-0.46	-0.46	0.54	-0.97	0.75	-0.48	-0.26
	Interaction	0.25	0.25	0.68	0.68	-0.07	-0.07	0.23	0.23	0.74	0.74
	Total	2.96	-2.96	2.96	-2.96	3.18	-3.18	2.99	-2.99	2.88	-2.88
with Either	Behavioral	2.04	-2.03	1.17	-1.44	1.95	-1.89	2.40	-2.23	1.75	-1.88
	Structural	-0.55	0.55	0.06	-0.33	-0.28	0.34	-0.75	0.93	-0.41	0.27
	Interaction	-0.01	-0.01	0.27	0.27	-0.06	-0.06	-0.18	-0.18	0.14	0.14
	Total	1.48	-1.48	1.50	-1.50	1.61	-1.61	1.47	-1.47	1.48	-1.48

Source: compiled by authors the Current Population Survey, March 1981: After-tax money income estimates, the Time Use Longitudinal Panel Study, 1975-1981 and 1997 Child Development Supplement to the Panel Study of Income Dynamics.

*Note that slight differences in totals are due to differences in estimates due to use of listwise deletion of item missing cases.

Table 3. Decomposition of Structural and Behavioral Elements of Changes in Estimates of Children's Weekly Mean Time (in hours) with Parents in Two Parent Families, 1981-1997

		Maternal Labor Force Participation		Maternal education		Maternal labor force participation and education	
		(1)	(2)	(3)	(4)	(5)	(6)
		Base Year		Base Year		Base Year	
		1997	1981	1997	1981	1997	1981
With Mothers	Behavioral	6.42	-6.49	5.53	-5.73	6.12	-6.29
	Structural	-0.66	0.59	0.11	-0.31	-0.51	0.34
	Interaction	0.07	0.07	0.19	0.19	0.17	0.17
	Total	5.83	-5.83	5.84	-5.84	5.78	-5.78
With Fathers	Behavioral	4.15	-4.57	4.01	-4.40	3.99	-4.70
	Structural	-0.35	-0.07	-0.18	-0.21	-0.50	-0.21
	Interaction	0.42	0.42	0.39	0.39	0.71	0.71
	Total	4.22	-4.22	4.22	-4.22	4.21	-4.21
With Either	Behavioral	2.79	-3.13	2.08	-2.55	2.52	-3.20
	Structural	-0.76	0.42	-0.18	-0.29	-0.86	0.18
	Interaction	0.34	0.34	0.47	0.47	0.68	0.68
	Total	2.37	-2.37	2.37	-2.37	2.34	-2.34

Source: compiled by authors the Current Population Survey, March 1981: After-tax money income estimates, the Time Use Longitudinal Panel Study, 1975-1981 and 1997 Child Development Supplement to the Panel Study of Income Dynamics.

Table 4. OLS Coefficients from the Regression of Children's Weekly Hours with Parents Either Engaged or Accessible on Select Independent Variables: United States 1997

Independent Variable	With Mothers	With Fathers	With Either
Constant	38.935**	27.955**	41.592**
Family type (0=two parent)	-9.039**	-18.012**	-10.709**
Mother part time work	-1.864	-0.872	-1.203
Mother full time work	-5.760**	0.715	-3.743**
Mother College Degree (0=no degree)	1.852		
Head College Degree (0=no degree)		1.703	3.443**
Mother age	-0.182		
Head age		-0.145*	-0.217*
Child Age binary (0=under 6 years old)	4.500**	0.626	4.695**
Child Sex (0=males)	0.626	-0.660	0.033
Number of children in family	0.388	0.059	0.676
Age of youngest child	-0.400	-0.083	-0.433*
Black	-0.266	-2.126*	-0.960
Family income (\$10,000)	0.052	0.058	-0.022*
Number of families	1486	1478	1478
Number of children	2043	2033	2033
F	14.30	43.81	16.24
(df)	(11, 1475)	(11, 1467)	(11,1467)
R2	.1535	.2845	.1684

Source: compiled by authors. Data from the 1997 PSID-CDS. Note: *p <.05, **p <.01

Appendix table 1. Means from the Regression of Children’s Weekly Hours with Parents Either Engaged or Accessible on Select Independent Variables, All Families: United States 1997

	Mothers		Fathers		Either	
	Mean	Std. Dev.*	Mean	Std. Dev.	Mean	Std. Dev.
Dependent variable	28.571	16.086	18.527	14.949	30.499	16.317
Family type (0=two parent)	0.220	0.414	0.221	0.415	0.221	0.415
Mother part time work	0.220	0.414	0.221	0.415	0.221	0.415
Mother full time work	0.410	0.492	0.410	0.492	0.410	0.492
Mother College	0.228	0.420				
Head College (0=no college)			0.273	0.446	0.273	0.446
Mother age	36.286	7.440				
Head age			37.933	7.796	37.933	7.796
Child Age binary (0=under 6 years old)	0.294	0.456	0.294	0.456	0.294	0.456
Child Sex (0=males)	0.489	0.500	0.488	0.500	0.488	0.500
Number of children in family	2.477	1.155	2.478	1.157	2.478	1.157
Age of youngest child	5.610	3.235	5.618	3.239	5.618	3.239
Black	0.162	0.369	0.163	0.370	0.163	0.370
Family income (\$10,000)	5.109	4.501	5.126	4.511	5.126	4.511
Number of families (n)	1486		1478		1478	
Number of children (n)	2043		2033		2033	

Source: compiled by authors. Data from 1997 PSID-CDS. *Note: Standard deviations presented not adjusted for sampling of multiple children within a household.