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Changes in American children's time – 1997 to 2003

Sandra L. Hofferth

Department of Family Science, 1210E Marie Mount Hall, School of Public Health, University of Maryland, College Park 207423

Sandra L. Hofferth: hofferth@umd.edu

Abstract

Over the six-year period between 1997 and 2003 broad social changes occurred in the United States: welfare rules changed, the nation's school policies were overhauled, America was attacked by terrorists, and American values shifted in a conservative direction. Changes in children's time were consistent with these trends. Discretionary time declined. Studying and reading increased over the period, whereas participation in sports declined, suggesting that the increased emphasis on academics at the school level has altered children's behavior at home as well. Increased participation in religious and youth activities and declines in outdoor activities may reflect changes in parental values and security concerns. The results suggest continuation of the upward trend in reading and studying from the 1980s and early 1990s, but increased religious attendance and youth group participation rather than increased participation in sports characterized this recent period.

Keywords

Leisure time; children; family; time trends

1 Changes in children's time – 1997 to 2003

1.1 Introduction

The public is fascinated by trends in children's activities, such as homework, sports, reading, and watching television (Mathews, 2003; Ratnesar, 1999). Although to repeatedly measure and then report these activities may appear insignificant, to the contrary, a comparison of how children spend their time today compared to the past opens a window on changes in values and beliefs over the period that would otherwise be invisible.

Research on changes in values and beliefs has been hampered by its dependence upon individual self-report. What individuals report cannot usually be taken at face value, but must be deconstructed (Daly, 2001). Researchers attempt to look beneath the surface to interpret the meaning of what respondents say, recognizing that actors may be unaware of their motivations. For example, some parents who enroll children in extracurricular activities may want their child to win a college scholarship (Dunn, Kinney and Hofferth, 2003), while others may desire to improve social skills or even to create positive childhood memories (Daly, 2001). Self-reports are particularly insensitive to social change. If the same questions or categories are used, major changes or shifts cannot surface (Alwin, 2001).

However, an alternative to self-report for assessing values and beliefs is the examination of behavior. The experiences, the actions that individuals and families take, are important. Each of us has exactly 24 hours each day, and only those 24 hours; what varies is how we use that

time. Although some actions are reinforced externally, value-based actions are self-reinforcing. Satisfaction or nostalgia occurs after the fact, strengthening the behavior. To the extent that parents make activity decisions based upon anticipation of consequences, symbolic as well as physical, they are expressing their values (Bandura, 1976). Thus, how people spend their time becomes a reliable indicator of their values. And, even more important, how parents and children make decisions regarding their children's time is a reliable indicator of their values regarding childrearing. As parental values or underlying circumstances change, children's activities should change.

This paper, therefore, examines changes in children's time as indicators of changes in family and societal circumstances and values over time. It examines changes in the activities of children 6 to 12 between 1997 and 2003, the latest year in which detailed data on American children's time are available. It explores whether changes occurred in participation or in time spent. Finally, it examines whether changes reflect changes in family structure, family income, family size, maternal education, and maternal employment or whether they reflect broader social changes that occurred between 1997 and 2003.

1.2 Background

Previous research has examined social change between 1981 and 1997, focusing on the consequences for children's activities of three major demographic shifts: increased labor force participation of mothers, decline in two-parent families, and increased educational levels of the population (Hofferth and Sandberg, 2001b; Sandberg and Hofferth, 2001; Sayer, Bianchi and Robinson, 2004). Documented were three associated changes in children's time. First, nondiscretionary time, the sum of day care/school, personal care, eating, and sleeping, increased and, therefore, discretionary time declined (Hofferth and Sandberg, 2001b). Second, time in structured activities such as art activities and sports increased and unstructured play, housework, and television viewing declined. Third, time spent in religious attendance declined, but children's study and reading time rose.

The increase in nondiscretionary time resulted from children spending more time in day care because of increased maternal employment. Mothers were attracted into the work force by higher female wages and encouraged to take increasing responsibility in the financial support of their families by family dissolution and stagnating male wages up through the mid 1990s (Levy, 1998). In contrast, declining play, television viewing, and household work, and increased arts, sports participation, reading, and studying occurred among children of nonworking as well as working mothers; therefore, these were not due to changes in maternal employment, but could represent broad value change (Hofferth and Sandberg, 2001b). Many ongoing changes reflect the increased educational levels of the population. Mothers with higher education place more value on reading, studying, and constructively using time (Hofferth, 2006). Previous research has pointed to the value parents place, not just on academic success, but also success in developing their children's physical, social, and creative skills (Dunn, Kinney and Hofferth, 2003). In 1997 children of mothers with some college spent more time reading, participating in youth groups, and studying, and spent less time watching television, compared with children of less educated mothers (Hofferth and Sandberg, 2001b). Between 1981 and 1997 a decline in religious attendance occurred among those children whose mothers had not completed any college.

What changes took place between 1997 and 2003, a six-year period at the end of the 20th century, that justify examining changes in children's time over this relative short period of time? There was little of the change in family structure and family size that characterized previous periods (Federal Interagency Forum on Child and Family Statistics, 2003; U.S. Bureau of the Census, 2005); however, four critical changes occurred. The first was a revival of conservative values during the 1990s linked with both Democratic and Republican

administrations. Second, and associated with this first change, was the passage of welfare reform legislation in 1997 that changed the welfare system to a program of temporary assistance by removing entitlements, setting limits on eligibility, and establishing assisted pathways to independence for low-income mothers. Third, was the passage of legislation in 2001 establishing clear academic benchmarks for primary and secondary students in the U.S. and enforcing testing to evaluate progress on these goals. The fourth was the attack by terrorists on the World Trade Center in New York City on September 11, 2001.

A revival of traditional conservative values occurred in the last decades of the 20th century (Ansell, 2001). According to international commentators, the debates in the 2000 and 2004 elections focused more upon moral issues than foreign policy or internal economic policy (The Scotsman, 2004). Republican control over both houses of Congress and the election of a Republican President in both 2000 and 2004 solidified the conservative ascendancy. Abortion rights and gay marriage continue to be hot-button issues in Supreme Court appointments and state legislative initiatives. Increased conservatism may be reflected in activities such as increased attendance at religious services and children's participation in youth groups, which includes youth activities sponsored by religious institutions.

Increased conservatism was especially evident at the end of the 20th century, with Democratic President Bill Clinton supporting a socially conservative welfare bill in 1997. From the early to the mid 1990s, state legislation tightening welfare eligibility, followed by the passage in 1997 of federal legislation, the Temporary Assistance to Needy Families Act (TANF), increased emphasis on work in welfare programs (Hofferth, Stanhope and Harris, 2002). Subsequently, the employment levels of single mothers increased to those of married mothers (Federal Interagency Forum on Child and Family Statistics, 2003). The proportion of children living in a family with at least one full-time full-year employed parent was at a record high (Federal Interagency Forum on Child and Family Statistics, 2003). In addition, the proportion of children living with two parents employed full-time year round doubled from the early 1990s. This should lead to children spending even more time in school and in day care, with a concomitant decline in discretionary time.

"No Child Left Behind" legislation introduced by Republican President George Bush in 2001 focused upon making schools accountable for continued improvements in the academic progress of their students. This legislation increased emphasis on academic success in school, and raised concern about homework and studying time (Loveless, 2003) at a time when more women were completing four or more years of college (U.S. Bureau of the Census, 2008). National tests show gains in mathematics, particularly for younger students, but since 1992 children's reading test scores have remained about the same (Loveless, 2003). Reading for pleasure is the single most important activity associated with higher children's test scores in previous studies (Hofferth and Sandberg, 2001a), yet little is known about whether the small increases shown in the 1980s and 1990s (Hofferth and Sandberg, 2001b) have continued. Studying has also been found to be associated with higher achievement, particularly for adolescents (Cooper et al., 1998). Increased emphasis on academic success may have led to children spending increased time both studying and reading for pleasure. A related activity that may have been affected is participation in youth groups, which includes academic clubs, social clubs such as scouts, and service clubs such as safety guards. Extracurricular activities have been associated with greater academic success (Mahoney, Harris and Eccles, 2006).

Finally, the attacks by terrorists on the World Trade Center in September of 2001 increased anxiety about safety and security. The heightened concern about children's safety in their own communities (Pebley and Sastry, 2004) perhaps further reinforced the choice of supervised activities over free play. In addition, it sent many families back to a search for community, including religious and community institutions.

1.3 Limits on choice of activities

Of course, not all families have access to the resources to pay for children's extracurricular activities or to live in safe neighborhoods. Access to resources is generally linked with family income, though race/ethnicity may be associated with differential access because residential segregation leads to differential neighborhood and school quality (Phillips and Chin, 2004). Previous research has not shown income to be an important predictor of children's activities (Hofferth and Sandberg, 2001a); children may have access to free or low-cost extracurricular activities through their schools. However, the part played by income compared with other factors needs to be explored using more recent data. The extent to which activities are associated with family income tests whether activities are limited by access and the extent to which they are associated with maternal education tests whether activities are primarily value-based. Race/ethnicity contributes to activity choice through access and through values, as do family structure and maternal employment, and their association with activities helps shed light on the role of resources versus values.

1.4 Research questions and hypotheses

This paper describes changes in children's time between 1997 and 2003, whether they are consistent with demographic and policy changes that occurred over the period, and whether they continue or alter trends seen since 1981.

We expect to see a continued decline in discretionary time as a result of continued increases in maternal employment, and continued increases in studying and reading time of children as a result of increased pressure to achieve in school. However, increased academic pressures may have reduced attention paid to sports. Additionally, increased conservatism may have increased attendance at religious services. Declines in children's time spent in outdoor activities such as walking would be consistent with increased security concerns. To test these hypotheses, we regress activities in 1997 and 2003 on maternal education, maternal work status, family size, age and gender of child, number of parents, race/ethnicity, and family income in the appropriate year, controlling for an indicator of whether the year was 2003. A significant sign on the coefficient for the activity in 2003 indicates that there was a change, controlling for all the other factors. Finally, our theoretical hypotheses regarding the importance of values versus access to resources would be supported if maternal education has a stronger association with children's activities than does family income.

2 Methods

2.1 The 1997 Child Development Supplement to the Panel Study of Income Dynamics

The study sample was drawn from the 1997 Child Development Supplement (CDS) to the Panel Study of Income Dynamics (PSID), a 30-year longitudinal survey of a representative sample of U.S. men, women, children, and the families in which they reside. In 1997, the PSID added a refresher sample of immigrants to the United States 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 and Moffitt, 1998). With funding from the National Institute of Child Health and Human Development, data were collected in 1997 on up to two randomly selected 0 to 12-year-old children of PSID respondents both from the primary caregivers and from the children themselves. The CDS survey period began in March 1997 and ended in early December 1997 with a break from mid-June through August; thus the study took place only during the spring and fall. Interviews were completed with 2,380 child households containing 3,563 children. The response rate was 88%. Post-stratification weights based upon the 1997 Current Population Survey were used to make the data nationally representative. Sample characteristics reflect the characteristics of the population of children under age 13 in the United States in 1997. The sample used in this study consisted of boys and

girls between 6 and 12 years of age in 1997, from first grade through about grade 6 or 7, and who had a mother in the household. These children were born between 1985 and 1991.

2.2 The 2003 Child Development Supplement to the Panel Study of Income Dynamics

In fall 2002 through spring 2003, the participants of the 1997 Child Development Supplement were contacted again and another supplement was administered. Because 5–6 years had passed since they were previously interviewed, few children in the 2003 wave were under age 6. Consequently, to make comparisons of the two cohorts of children, we restricted the sample taken from the 2003 study to those children who were aged 6 to 12 years of age in 2003 and whose families participated in the 2003 Supplement. These children were born between 1990 and 1996. Some of the children from the original 1997 data collection were 13–18 in 2003; however, we did not include them because the 1997 wave did not have a comparable adolescent sample. The total potential number of children eligible to participate was 3,271, of whom 88.9% participated in the 2003 supplement. Weights were calculated to adjust for the original probability of selection and for attribution between 1997 and 2003. Thus the weighted total is representative of children aged 6 to 12 in 1997 or in 2003.¹

2.3 Time diaries

The Child Development Supplements collected complete time diaries for one weekday and one weekend day for 79 percent (2,818) of the 3,563 sample children aged 0 to 12 in 1997 and 82% of the 2,911 children participating in 2003. Comparisons between children who provided a diary and those who did not showed no significant differences on demographic characteristics. The time diary, which was interviewer-administered either to the parent or to the parent and child, asked questions about the child's flow of activities over a 24-hour period beginning at midnight of the randomly designated day. These questions asked the primary activity that was going on at that time, when it began and ended, and whether any other activity was taking place. Children's activities were first assigned to one of 10 general activity categories (e.g., sports and active leisure) and then coded into 3-digit subcategories (e.g., playing soccer). Coding was conducted by professional coders employed by the data collection organization; the level of reliability exceeded 90 percent. Time spent traveling for the purpose of engaging in a specific activity was included in that category.

In the coding process, children's activities were classified into ten general activity categories (paid work, household activities, child care, obtaining goods and services, personal needs and care, education, organizational activities, entertainment/social activities, sports, hobbies, active leisure, passive leisure), and further subdivided into 3-digit subcategories (such as parent reading to a child) that could be recombined in a variety of ways to characterize children's activities. For comparison purposes, the primary activities of children aged 3 to 12 were classified into the 18 major categories used by Timmer and colleagues in the early 1980s (Timmer, Eccles and O'Brien, 1985) and by Hofferth and Sandberg in 2001 (Hofferth and Sandberg, 2001a; Hofferth and Sandberg, 2001b). These categories were expanded to separate shopping from household work and to separate day care from school. Youth groups were also distinguished from the broader "visiting" category. Religious attendance does not include meeting time of youth groups in a religious building but reflects attendance at services. Time

¹The 1997 sample used in this study differs slightly from the sample used in the analysis of change between 1981 and 1997 (Hofferth and Sandberg, 2001b). The previous analysis was conducted with an early version of the time diary file; slight changes in the file occurred between that time and the current release. Both studies deleted children without two diaries and children who spent the entire week in one activity, and both studies weighted the data using PSID-provided sampling weights. The present 1997 data set includes four fewer children aged 6 to 8 and one fewer child aged 9 to 12 than did the one used for the previous report. We were unable to replicate the file exactly. Because of this sample difference, there are several small and nonsignificant differences between children's weekly time in some activity categories in the two reports. These differences in point estimates of only a few minutes do not influence the conclusions regarding changes over time between 1997 and 2003.

spent traveling for the purposes of engaging in a specific activity was included in that category. Secondary activities are not measured. For example, time spent doing housework with the television on where housework was the primary activity is not counted as time “watching television”.² Thus, some activities that are often secondary may be underestimated. Given that many activities are occasional, we would not expect all children to engage in most of these on a daily basis. However, we want to abstract from this to describe the activities of American children in general. Because not all children do every activity each day, the total time children spend in an activity is a function of the proportion who engage in the activity and the time those participating spend in it. An estimate of weekly time is computed by multiplying weekday time (including those who do not participate and have zero time) by 5 and weekend day time by 2, after removing a few children who did not have both a weekend and weekday diary.³ Selecting children aged 6 to 12 with two diaries and who were not interviewed over the Christmas break (see below), sample sizes were reduced to 1,448 cases in 1997 and 1,343 cases in 2003, a total of 2,791; missing data on some of the demographic variables further reduced the sample to 2,564 for the multivariate analyses.

Robinson and Godbey (1997) distinguished among contracted time (work, school), committed time (household and child care obligations), personal time (eating, sleeping, personal care), and free time (everything else). We generally use this model with some small changes because we are concerned with children, not adults. Because they have to be in school but don't have to work, we treat school and day care rather than work as children's “contracted” or nondiscretionary time. Personal care time is time spent eating, sleeping, and caring for their personal needs. Few children have “committed” time; we include household work as part of their free time because children negotiate their participation in household work from family to family. It is not fixed by society, like school, or by physical needs, like sleep and personal care. In comparison to discretionary time, nondiscretionary time varied little between 1981 and 1997 (Hofferth and Sandberg, 2001a). For the purpose of this paper, therefore, free or discretionary time consists of household work, shopping, studying, religious attendance, youth groups, visiting, sports, outdoors activities, hobbies, art activities, play, television viewing, reading, household conversations, and passive leisure (which includes going to movies and sports events as a spectator).

Limits of comparability across the two years of data—Because the two data collections were similarly conducted, the results should be comparable. There is one limitation, however, the seasonal difference between the 1997 and 2003 samples. The 1997 study was conducted primarily between March and June, and then again in September through November. In contrast, the 2003 study was conducted in October 2002 through June 2003, with the majority of interviews conducted between November 2002 and March 2003. Therefore, the data collection seasons were almost completely opposite, with the 1997 survey conducted in the late spring and early fall and the majority of the 2003 survey interviews conducted during the winter months. Although one would not expect that seasonality would play a major part in children's activities, it, in fact, does. The potentially most serious problem was that the 2003 survey was conducted over the Christmas holidays, when children were not attending school and their activities differed dramatically from those during the school year. Consequently, after examining the calendar for 2002 and 2003, all children's diaries collected from December 20, when schools begin closing for the holidays, through January 5, when most children should have been back in school, were deleted. This removed 157 cases for 2003.

In order to address concerns about whether activity changes resulted from seasonal differences across the survey period with respect to outside temperature at interview, we created a dummy

²The specific activities that make up each of the 21 categories are available from the authors.

³Two children who, in 1997, had only one activity (traveling or visiting) were also excluded.

variable by coding the geographic location of the child into two types of states – warm-weather states and nonwarm-weather states. This was based upon the heating degree days calculated by the U.S. National Oceanic and Atmospheric Administration for the July 2004 to November 2005 season (U.S. Department of Commerce, 2006). Based upon data that showed a clear degree-day distinction between states in the southern rim of the U.S. and more northern states, states with fewer than 3,000 cumulative degree days were coded as warm states and the rest were nonwarm states.⁴ Children in warm weather states should not be affected by seasonality that is weather-related. The results of our analysis indicated, as expected, that outdoors and sports activities were higher and participation in indoor activities lower in warm compared to nonwarm states in both 1997 and 2003 (not shown). However, in both warm and non-warm states, the data showed a decline in sports participation for both age groups between 1997 and 2003. The decline in sports, therefore, is not a result of differences in temperature at the interview dates in 1997 and 2003. It could still result from differences in seasonality that are not temperature-related because there is still substantial seasonality in the sports available to children in their schools and clubs; however, that type of seasonality should be limited to sports and should not in any way affect reading, studying, playing, sleeping, TV watching, or video game playing.

2.4 Variables

Besides the overall descriptive analyses by age of child (based upon age in months at the time of the CDS parent interview), we also conducted multivariate analyses using key demographic characteristics of the family as independent variables, including maternal employment (employed versus not employed), maternal education (some college and completed four years of college or more versus no college), family structure (1 versus 2 parents), family size (1 or 2 versus 3 or more children), and gender of the child. Income was measured by the ratio of family income to needs, the annual income of the family for the previous calendar year divided by the poverty line in dollars for that family size and year. We included a dummy variable for whether the state the child was residing in met the previously described definition of warm state or not. All the definitions were consistent across the two waves of data except that of maternal employment. In 1997, maternal employment was defined as ever-employed in the previous year, whereas, in 2003, maternal employment was defined as employed at the time of the survey. The core PSID data wave that collected employment information was conducted in 2001 and not in 2002; employment at the survey date was deemed to be a better indicator than employment more than a year prior to the survey.

2.5 Analysis plan

The descriptive analyses show the proportion of children in an activity and then the total time, including those who did not participate. T-tests were used to compare across the years 1997 and 2003 and to compare boys and girls.

The purpose of the multivariate analyses is to examine the extent to which individual and family sociodemographic changes and study design account for changes in children's time between 1997 and 2003. These analyses of amount of time spent in the activity are based upon Tobit regression models that adjust for the fact that not all children engage in each activity, which would otherwise skew the distribution of times (Tobin, 1958), but permit keeping time at the interval level. If ordinary least squares (OLS) were used, the regression slope would be biased by the inclusion of zero values. The Tobit coefficients reflect both the effect of the independent variable on the probability of the activity and on the hours spent in the activity by participants (McDonald and Moffitt, 1980). The higher the proportion of children who participate in the

⁴The warm weather states are Alabama, Arizona, California, Florida, Georgia, Hawaii, Louisiana, Mississippi, New Mexico, South Carolina, and Texas. Hawaii was not represented in our study.

activity, the more the results reflect the hours among participants and thus the more similar the results become to those from OLS regressions just on participants. Therefore, for activities in which all or almost all children participate (e.g., television viewing), OLS is used. All analyses are weighted using population weights provided by the PSID-CDS, which were then normalized so that numbers represent actual sample sizes. Robust standard errors were computed using STATA to adjust for clustering of both children within families and across the two years.

3 Results

3.1 Children's participation in activities by age

Between 1997 and 2003, declines in participation of children 6–12 occurred in several activities: visiting, sports, spending time out of doors, engaging in other passive leisure, and conversing with household members (Table 1). The proportion playing declined 4% and the proportion spending time in household work declined 9% for children aged 9 to 12, but not for children aged 6 to 8. Market work declined, but from a very low initial level.

The largest participation declines occurred in sports and outdoor activities, a decline that occurred in warm states as well as other states (not shown). Over all children aged 6 to 12, there was a decline of 21% in participation in sports, from 76% to 60%, a decline that occurred equally for children of both age groups. There was also a 37% decline in participation in outdoor activities, from 16% to 10%. We would expect increases in most of the other activities, because the total still must add to 24 hours. However, we do not see equal increases in other activities. Increases were selective.

The percentage of children reported as spending time studying increased between 1997 and 2003, a continuation of the upward trend from 1981 to 1997. Sixty-six percent of 6–12-year-old children reported studying at all in 2003, compared with 58% in 1997, an increase of 14%. As between 1981 and 1997, the proportion spending any time studying in a survey week increased more for younger children 6 to 8 (21%) than for older children 9 to 12 (10%). By 2003, almost the same proportion of younger (64%) as older children (68%) spent some time studying. This is a major change over just six years.

Similarly, 47% reported reading during the survey week in 2003 compared to 38% in 1997, an increase of 24% over the period. Again, the increase was larger for younger children (29%), than for older children (23%). In contrast to studying, where in 2003 the participation rates were similar, a larger proportion of younger than older children read for pleasure during the study week in both 1997 and 2003.

Several other categories of activities rose by considerable percentages. For all children, religious attendance rose 23%, from 26% to 32%, and participation in youth groups rose 26% (from 27% to 34%) between 1997 and 2003. Participation in art activities rose 13% for the entire group, with a 35% increase for children aged 6 to 8 (from 26% to 35%), and no increase for children aged 9 to 12.

Numerous categories showed no change. The proportion participating in personal care, eating, hobbies, sleeping, and school and day care did not change. Except for a 3% increase for children aged 9 to 12, the proportion watching television remained high and stable. Almost all watched television.

3.2 Time spent in activities by age

The total weekly time in each activity over all children, with nonparticipants (those spending zero time in an activity) included, is shown in Table 2. We first examined discretionary and

nondiscretionary time. To obtain discretionary time we summed personal care, eating, sleeping, school and day care and subtracted the total from 168, the total number of hours available in a week. We found a decline in discretionary time between 1997 and 2003 that continued the decline previously found between 1981 and 1997. In 1981 children aged 6 to 12 enjoyed about 57 discretionary hours per week. In 1997, children aged 6 to 12 enjoyed about 50 discretionary hours per week. By 2003, discretionary time had declined two hours to about 48 hours. This is a decline of only 4%, small relative to the 12% decline from 1981 to 1997, but still significant because it occurred over only a 6-year period. The reason for the decline in discretionary time between 1997 and 2003 is the increased amount of time spent sleeping and in school, nondiscretionary activities. Personal care and day care remained constant and eating time declined slightly. In the following we focus only on discretionary time.

A comparison of Tables 1 and 2 tests whether changes in discretionary time result from changed participation or from changed time spent among those who participate. For example, the total time spent studying rose both because more children studied and because those who studied spent more time doing it. Including those who did not study at all, on average, children spent 2 hours and 55 minutes studying in 1997 and 3 hours 36 minutes per week studying in 2003, an increase of 23%. The percentage increase in time (23%) was greater than the percentage increase in participation (14%), indicating that time spent studying increased among those who studied (by 8%, not shown). The time spent studying showed a slightly larger rise for children aged 6 to 8 (32%, from 1:58 to 2:36) than for children aged 9–12 (20%, from 3:36 to 4:20).

Reading time for the entire age group of 6 to 12-year-olds increased 34% – from 1:11 to 1:35 – with the increase equal for older and young children. Similar to studying, the overall increase in reading time (34%) exceeded the percent increase in participation (24%), indicating increased time in reading among those who read (6%, not shown).⁵ We checked to see whether increased studying and reading was linked to season of interview. Study time increased in both warm and in nonwarm states, suggesting that it was a real change, whereas reading time increased only in nonwarm states, perhaps reflecting seasonality (not shown).

Declines occurred in several activities. Consistent with decreased participation, time in other passive leisure declined 17% and time spent in household work declined 12%. These declines were primarily due to a decline in participation rather than to a decline in time spent among participants. The 31% decline in time spent in outdoor activities also reflected a decline in participation rather than time spent among participants. In contrast, the 37% decline in time spent in sports reflected both a decline in participation and a decline in time spent among participants. These declines in physical activities occurred in both warm and nonwarm states (not shown). Time spent visiting declined 13%, again due to decline in both participation and time spent.

Because of the declines in several major categories of activities, we expected increases in other activities. We found an increase of 6% in television viewing time, for example. Television viewing time remained constant for 6–8 year olds but increased for 9–12 year olds. Time spent in art activities remained at a low level. Although participation in art activities rose 35% for children aged 6 to 8, there was no overall increase in time spent in art activities for either age group or all children. Time in art activities among those participating remained constant. Sleep time rose by about 2% for all children 6 to 12 years of age.

There were several categories of activities that rose by large percentages. Between 1981 and 1997 the time in religious attendance had been declining (Hofferth and Sandberg, 2001b). Although the overall time spent in attendance at religious services was still low – 1 hour and

⁵To calculate the weekly time for only those participating, divide the time in hours by the percent participating.

44 minutes in 2003 – the time spent rose 25% between 1997 and 2003, reflecting a 23% increase in participation and a 2% increase in time spent among participants. Youth groups also showed an increase. The total time spent in youth groups rose from 44 minutes to about an hour a week between 1997 and 2003. The increase of 36% over the period reflected a 26% increase in participation and a 7% increase in time spent among those participating (not shown). The increased time in religious activities was almost entirely a result of increased participation rather than increased time, whereas increased time in youth groups resulted from both increased participation and increased time spent in it.

3.3 Gender differences in activities

Table 3 shows gender differences in time spent in these activities, again including nonparticipants. In 2003, girls spent more time in household work, shopping, personal care, outdoor, and art activities than did boys. Boys spent more time in sports, hobbies, and play. Boys spent more time studying than girls in 1997, but that differential disappeared completely by 2003. Most of the 1997–2003 trends in activity time were similar for both boys and girls. The one exception was sports. The decline in sports was much larger for boys than for girls. Finally, only girls' play time declined from 1997 to 2003; boys' play time stayed the same.

3.4 Multivariate analyses of change, 1997 to 2003

This analysis focuses on reading, studying, sports, outdoor time, religious attendance, youth groups, household work, other passive leisure, visiting, outdoor activities, and television viewing. On these variables the descriptive analysis (Tables 1 and 2) suggested that changes in time occurred between 1997 and 2003.⁶ The means for all the variables are shown in Table 4. Seventy-two percent of the sample was white, 16% Black, and 13% Hispanic. Forty-three percent of mothers completed at least some college, and 57% completed high school or less. Three-quarters of children lived with two parents and two-thirds had an employed mother. Forty-three percent of children lived in families with 3 or more children. Average family income was 3.4 times the poverty line, about \$47,600 for a family of three in 2003. One-third lived in a so-called “warm” state. The time data are comparable to Table 2, but the hours are in hours and fractions of an hour rather than hours and minutes. The sample size is reduced because of missing data on the independent variables.

3.4.1 Did real changes in time occur?—The first question is whether, after controlling for socioeconomic characteristics, state, and season of interview, real changes in children's time between 1997 and 2003 occurred. Examining the variable “year is 2003” in Table 5, we see that time attending religious services and time spent participating in youth organizations were significantly higher in 2003 than in 1997; thus, time in these activities increased over the period. Participation in sports and outdoor activities was significantly lower in 2003 than 1997; participation in these activities declined. Differences between 1997 and 2003 in background variables such as maternal education, family income, type of state and season produced some of the apparent changes we saw previously in the time spent reading, studying, watching television, household work, passive leisure, and visiting. After controlling for background variables, there was no longer a significant difference in time spent in these activities between 1997 and 2003. For example, in this analysis the time spent reading was larger in 2003 than in 1997 by about .65 hours (39 minutes) per week, but the coefficient was not statistically significant.

3.4.2 Linking children's activities to resources—Access to resources is measured here by the ratio of family income to poverty and by race/ethnicity. In spite of the common belief

⁶A reduction in time in market work was significant; however, few children 6–12 engaged in market work.

that access to resources affects children's activities, the results show that greater family income to needs levels were directly associated only with the amount of reading time, household work, passive leisure, and television viewing. Children in higher income families were more likely to read for pleasure and spent more time reading than children from lower income families. In addition, children from higher income families spent fewer hours watching television. Finally, children in higher income families did marginally less household work and engaged in marginally more passive leisure. Presumably, financially advantaged children have access to many more valued types of activities that are alternatives to television and the family may pay for help with household work. No link between the ratio of income to needs and sports participation was found. Because reading and television viewing do not require the monetary resources that sports require, the associations between income and reading or television viewing may also reflect attitudes and values linked to economic success. That family income is not strongly predictive of many of children's activities net of education does not mean that income does not influence children's academic success; reading is a key developmental activity.

Race/ethnic differences are linked to resources and to values. Being Black or Hispanic was associated with fewer hours spent playing sports and engaging in outdoor activities. Black children spent significantly more time – about 2 hours per week – watching television than White children. Differences in sports and television viewing could be partially due to differences in resources, and lower time spent in outdoor activities may result from living in more dangerous neighborhoods. Finally, compared to White children, Black children spent about 2 more hours attending religious services, and Black and Hispanic children spent more time studying but less time reading for pleasure. These latter differences are likely to be linked to values rather than to resources.

3.4.3 Linking activity choices to values—The amount of education the mother has completed is the factor consistently associated with children's activities net of a variety of controls, corroborating previous work and our theory that time reflects attitudes and values more than access to resources. Greater maternal education, in particular, completing four or more years of college, was associated with children spending more time attending religious services, participating in youth organizations, reading and studying, and engaging in sports and outdoor activities (Table 5). It was also associated with children spending more time in passive leisure activities, being more likely to visit, and helping more around the house. This is possible because they spend less time watching television.

3.4.4 Other factors related to activity choices—Living with two parents was related to children's activity time. Children living with two parents spent more time in religious attendance and in youth organizations, and were more likely to read, but they spent less time in sports and outdoor activities than those with one parent. Children of employed mothers spent less time reading and watching television than did children of nonemployed mothers. This makes sense. Such children are more likely to be in day care (not shown); reading and watching television are activities more commonly engaged in at home than out of the home. Younger children spent less time in youth organizations, watching television, studying, in sports, and in outdoor activities than older children. They were more likely to read for pleasure, however. Children in larger families spent more time in household work and were less likely to visit or be in day care.

4 Discussion

Over the six-year period between 1997 and 2003 broad social changes occurred in the United States: welfare rules changed, the nation's school policies were overhauled, America was

attacked by terrorists, and American values shifted in a conservative direction. Changes in children's time were consistent with these trends.

Consistent with changed welfare rules that made it necessary for low-income mothers to seek employment, children spent more time in school and day care than they had in 1997. As a result, children experienced a small decline in their discretionary time over the period.

Consistent with the passage of "No Child Left Behind" legislation and the federal government's focus over the period on improving children's academic test scores was the increased time children spent studying. An increase in study time that was stronger for younger (6–8-year old) than older (9–12-year old) children is consistent with increased math test scores for 4th graders but not 8th graders that were documented in the NAEP. However, this trend was not significant after background factors were controlled, suggesting that increased maternal education and other factors such as season of interview explained the increase in studying.

Also consistent with the increased emphasis on reading skills, increases in time spent reading occurred for all children. These increases were, as for studying, larger for younger than for older children. Research shows that reading for pleasure is clearly the best preparation for standardized tests. Therefore, increased reading for pleasure at young ages is a good omen for children's later academic achievement. Again, increased reading was explained by changes in family characteristics; after maternal education, employment, income, and other factors were controlled, reading levels were similar in 1997 and 2003.

Increased conservatism in the United States and a terrorist attack on September 11, 2001 were major changes in the latter part of the 20th and beginning of the 21st century, respectively. A major shift in children's activities over this 6 year period is represented by increased religious attendance and time spent in religious activities. Reversing a previous decline between 1981 and 1997, this change likely reflected the increased threat to American national security, a return to basic values, and a search for meaning. Substantial increases in participation in and time spent in youth groups may reflect parents' desires that their children contribute to the community through volunteer and helping activities (Dunn, Kinney and Hofferth, 2003).

As some activities increased, others declined. Probably the most unexpected was the decline in participation in sports and outdoor activities in 2003 compared with 1997, even after controls for seasonality of interview and climate of state of residence were introduced. The decline in sports may be linked to the increased focus on academics, parental concern about overscheduling as a major topic for concern in the first part of the 21st century (Mahoney, Harris and Eccles, 2006). The decline in outdoor activities may be linked to safety and security concerns. A decline in time spent walking to school has been well-documented (Ham, Martin and Kohl, 2007). Both are relevant to concerns about reduced childhood physical activity and increased overweight over the past decade.

What is the relative importance of family values versus family resources in influencing children's time? Family income per se was less important to children's time than was maternal education. Greater family income to needs was linked to more time spent reading and less time spent watching television, with a marginal increase in passive leisure and a reduction in household work. Maternal education was much more important to children's time, influencing all the activities considered. This does not imply a lack of importance of income to children's outcomes, but does suggest that many of children's activities are not directly dependent upon financial resources. They are dependent upon family values and objectives for their children.

These changes reflect important value shifts at the beginning of the 21st century consistent with events and circumstances in the preceding decade. Changes in study and reading habits,

in sports and outdoor activities, and in participation in religious observance and youth group activities reflect important behavioral and value shifts that will affect lives for years to come.

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Table 1
 Percentage of children 6–12 participating in 21 weekly activities, 1997 and 2003, by age

Activities	Age 6–8		Age 9–12		All Ages	
	1997	2003	1997	2003	1997	2003
N	598	573	850	770	1448	1343
Market work	2%	0% **	3%	0% ***	3%	0% ***
Household work	66%	69%	79%	72% **	73%	71%
Shopping	49%	47%	46%	46%	47%	46%
Personal care	100%	100%	100%	100%	100%	100%
Eating	100%	100%	100%	99%	100%	100%
Sleeping	100%	100%	100%	100%	100%	100%
School	90%	93%	91%	90%	91%	91%
Studying	53%	64% ***	62%	68% **	58%	66% ***
Religious attendance	26%	34% **	26%	31% *	26%	32% ***
Youth groups	26%	33% **	27%	34% **	27%	34% ***
Visiting	47%	46%	56%	49% **	53%	48% *
Sports	74%	57% ***	77%	62% ***	76%	60% ***
Outdoors	15%	13%	16%	8% ***	16%	10% ***
Hobbies	2%	2%	4%	4%	3%	3%
Art activities	26%	35% ***	22%	21%	24%	27% *
Playing	93%	94%	88%	84% *	90%	88%
Television	96%	97%	94%	97% *	95%	97% *
Reading	42%	54% ***	35%	43% ***	38%	47% ***
Household conversations	32%	27% *	28%	25%	30%	26% *
Other passive leisure	46%	38% **	52%	44% **	49%	42% ***
Daycare	12%	11%	5%	7% *	8%	9%

Note:

*** statistically significant at the 0.001 level.

** at the 0.01 level, and

* at the 0.05 level.

Source: Own calculations from the Panel Study of Income Dynamics.

Table 2

Weekly time children 6–12 spent in 21 activities, 1997 and 2003, by age

Activities	Age 6–8		Age 9–12		All Ages	
	1997	2003	1997	2003	1997	2003
N	598	573	850	770	1448	1343
Market work	00:05	00:00 **	00:17	00:01 **	00:11	00:00 ***
Household work	02:25	02:27	03:44	03:05 **	03:11	02:49 *
Shopping	02:31	02:09	02:15	02:22	02:22	02:17
Personal care	07:59	08:02	07:51	07:42	07:55	07:50
Eating	08:18	07:50 *	07:23	07:15	07:46	07:30 *
Sleeping	70:58	72:49 ***	67:38	69:16 ***	69:03	70:45 ***
School	31:39	33:05 *	33:35	33:22	32:46	33:15
Studying	01:58	02:36 ***	03:36	04:20 **	02:55	03:36 ***
Religious attendance	01:23	01:43	01:23	01:44 *	01:23	01:44 **
Youth groups	00:37	00:50	00:49	01:09 *	00:44	01:01 **
Visiting	02:47	02:15	02:40	02:21	02:43	02:19 *
Sports	05:03	02:46 ***	06:31	04:31 ***	05:54	03:47 ***
Outdoors	00:31	00:34	00:39	00:18 *	00:36	00:25 *
Hobbies	00:04	00:02	00:09	00:05	00:07	00:03
Art activities	00:51	01:05	00:56	00:56	00:54	01:00
Playing	12:09	11:36	09:00	08:43	10:20	09:56
Television	12:40	12:36	13:32	14:54 **	13:10	13:56 *
Reading	01:09	01:31 **	01:13	01:38 **	01:11	01:35 ***
Household conversations	00:29	00:29	00:26	00:30	00:27	00:30
Other passive leisure	01:35	01:18	02:18	01:57	02:00	01:40 *
Daycare	01:35	01:22	00:32	00:44	00:59	01:00
Not ascertained	01:02	00:44	01:22	00:56 *	01:14	00:51 **
% of time accounted for	99%	100%	99%	99%	99%	100%

Note:

*** statistically significant at the 0.001 level,
** at the 0.01 level, and
* at the 0.05 level.

Source: Own calculations from the Panel Study of Income Dynamics.

Table 3
Weekly time children 6–12 spent in 21 weekly activities, 1997 and 2003, by gender

	Time spent in 1997		Time spent in 2003		Trend in time spent, change 1997–2003			
	Boys	Girls	Gender diff.	Boys	Girls	Gender diff.	Boys	Girls
N	731	717		688	655			
Market work	00:11	00:12		00:00	00:01		*	**
Household work	02:44	03:38	***	02:28	03:09	***		*
Shopping	01:57	02:47	***	02:04	02:28	*		
Personal care	07:17	08:32	***	06:59	08:39	***		
Eating	08:00	07:33	**	07:37	07:23		*	
Sleeping	68:54	69:12		70:37	70:53		***	***
School	33:05	32:27		33:15	33:15			
Studying	03:08	02:41	*	03:35	03:38		*	***
Religious attendance	01:24	01:22		01:43	01:44			*
Youth groups	00:47	00:41		00:54	01:07			**
Visiting	02:22	02:19	*	03:04	02:19			**
Sports	07:21	04:25	***	04:29	03:07	***	***	***
Outdoors	00:30	00:41		00:15	00:34	***	**	
Hobbies	00:04	00:09		00:05	00:02	*		*
Art activities	00:29	01:20	***	00:45	01:14	***	**	
Playing	11:12	09:27	***	11:33	08:23	***		*
Television	13:06	13:14		14:13	13:41		*	
Reading	01:04	01:18		01:27	01:43		**	**
Household conversations	00:27	00:27		00:26	00:33			
Other passive leisure	01:53	02:07		01:36	01:44		**	*
Daycare	00:54	01:04		00:54	01:06			
Not Ascertained (NA)	01:01	00:35	*	01:27	01:07	*	**	**
% of time accounted for	99%	99%		100%	99%			

Note:

*** statistically significant at the 0.001 level,

** at the 0.01 level, and

*
at the 0.05 level.

Source: Own calculations from the Panel Study of Income Dynamics.

Table 4

Means and standard deviations of variables

Variable	Pooled sample	
	Total 1997 & 2003	
	Mean	SD
Background:		
White and other	0.72	0.45
Black	0.15	0.36
Hispanic	0.13	0.33
Male	0.49	0.50
Age is 6–8 or actual age	0.41	0.49
Mother completed high school or less	0.56	0.50
Mother completed some college	0.22	0.42
Mother completed college or more	0.22	0.41
Mother is employed	0.67	0.47
Two parents (vs. one parent)	0.77	0.42
Three or more children	0.42	0.49
Family income to poverty ratio	3.40	3.82
Lives in warm state	0.31	0.46
Interview conducted in fall	0.27	0.44
Interview conducted in winter	0.32	0.47
Interview conducted in spring	0.41	0.49
Year is 2003	0.47	0.50
Weekly time (fractions of an hour):		
Reading	1.36	2.46
Studying	3.31	4.27
Sports	4.93	6.53
Religious attendance	1.55	3.19
Youth organizations	0.89	2.64
TV hours	13.50	9.98
Household work	3.06	4.11
Passive leisure	1.88	3.47
Eating	7.67	3.32
Visiting	2.57	5.01
Outdoor hours	0.54	2.55
Day care	1.06	4.30
N	2,564	

Note: All data are weighted.

Source: Own calculations from the Panel Study of Income Dynamics.

Table 5

Regression coefficients for effects of background on whether participated and weekly hours in selected activities

Variable	Reading		Studying		Sports		Religious attendance		Youth Organization		Household work		Passive Leisure		Visiting		Outdoors		Television		
	Logit Whether	Tobit Hours	Logit Whether	Tobit Hours	Logit Whether	Tobit Hours	Logit Whether	Tobit Hours	Logit Whether	Tobit Hours	Logit Whether	Tobit Hours	Logit Whether	Tobit Hours	Logit Whether	Tobit Hours	Logit Whether	Tobit Hours	Logit Whether	Tobit Hours	
Background:																					
Black	-0.73 ***	-1.58 **	0.44 *	1.17 *	-0.70 ***	-2.54 **	0.35 +	1.91 *	0.17	0.30	-0.38 *	-1.54 ***	-0.53 **	-1.51 **	-0.24	0.13	-0.70 ***	-2.54 **	1.89 *		
Hispanic	-0.63 *	-1.51 *	0.54 **	1.78 **	-0.60 *	-2.28 *	-0.07	-1.26	-0.03	-0.09	-0.21	-0.31	-0.20	-0.73	-0.29	-0.34	-0.60 *	-2.28 *	1.40		
Male	-0.21 +	-0.56 *	0.15	0.42	0.31 *	2.58 ***	0.00	0.20	-0.02	-0.02	-0.35 **	-1.21 ***	-0.13	-0.35	-0.18 +	-0.89 +	0.31 *	2.58 ***	0.10		
Age is 6 to 8	0.42 ***	0.29	-0.36 ***	-2.40 ***	-0.18	-1.90 ***	0.07	0.20	-0.06	-0.62 +	-0.46 ***	-1.39 ***	-0.25 *	-1.22 ***	-0.29 **	-0.54	-0.18	-1.90 ***	-1.45 **		
Mother completed some college	0.13	0.29	0.24	0.62	0.13	0.61	0.44 *	1.73 *	0.47 **	1.76 **	0.30 +	0.73 +	0.21	0.61	0.18	0.84	0.13	0.61	-2.96 ***		
Mother completed college or more	0.62 ***	1.46 ***	0.37 *	1.16 *	0.29	1.77 **	0.48 **	1.81 *	0.57 ***	2.21 ***	0.40 *	0.16	0.36 *	1.84 ***	0.41 *	1.13 +	0.29	1.77 **	-3.37 ***		
Mother is employed	-0.37 **	-0.79 **	0.18	0.60	0.18	0.54	-0.20	-0.79	-0.20	-0.51	-0.04	-0.31	0.06	0.15	-0.17	-0.54	0.18	0.54	-1.15 +		
Two parents (vs. one parent)	0.34 *	0.58	-0.16	-0.41	-0.35 +	-1.23 +	0.74 ***	3.05 ***	0.63 **	1.46 *	0.25	-0.12	0.02	0.23	0.08	0.24	-0.35 +	-1.23 +	-0.26		
Three or more children	0.11	0.15	-0.06	-0.32	-0.01	-0.07	0.11	0.59	0.14	0.00	0.05	0.66 *	0.02	0.20	-0.24 *	-0.87	-0.01	-0.07	-0.67		
Family income to poverty ratio	0.03 *	0.07 *	0.01	0.06	0.04	0.07	-0.01	-0.05	0.00	-0.02	-0.02 +	-0.05 +	0.03	0.09 +	0.05	0.05	0.04	0.07	-0.16 **		
Lives in warm state	-0.11	-0.23	0.01	0.36	0.35 *	1.52 *	-0.14	0.18	-0.21	-0.37	-0.36 *	-0.97 **	-0.26 +	0.36	-0.21	-0.58	0.35 *	1.52 *	-0.39		
Interview conducted in fall	0.09	0.11	0.03	0.02	-0.11	0.24	0.26	1.46 +	0.27	1.04 +	0.15	0.37	0.32 +	0.71	0.29 +	1.30 +	-0.11	0.24	-1.74 *		
Interview conducted in spring	0.00	-0.10	-0.53 *	-2.08 **	0.41 +	2.83 *	0.13	1.06	0.23	0.87	0.12	0.61	0.40 *	0.93	0.19	1.42 +	0.41 +	2.83 *	-0.14		
Year is 2003	0.28	0.65	0.05	0.01	-0.49 *	-1.09	0.40 +	2.05 *	0.53 **	1.81 **	-0.08	-0.2	-0.05	-0.33	-0.1	-0.13	-0.49 *	-1.09	0.43		

Variable	Reading		Studying		Sports		Religious attendance		Youth Organization		Household work		Passive Leisure		Visiting		Outdoors		Television	
	Logit Whether	Tobit Hours	Logit Whether	Tobit Hours	Logit Whether	Tobit Hours	Logit Whether	Tobit Hours	Logit Whether	Tobit Hours	Logit Whether	Tobit Hours	Logit Whether	Tobit Hours	Logit Whether	Tobit Hours	Logit Whether	Tobit Hours	Logit Whether	Tobit Hours
Constant	-0.40 +	-0.66	0.53 *	2.16 ****	0.36	0.82	-1.50 ****	-7.15 ****	-1.31	-4.40 ****	1.18 ****	3.39 ****	-0.37 +	-1.77 *	0.15	-1.02	0.36	0.82	0.36	17.66 ****

Note:

**** statistically significant at the 0.001 level,

** at the 0.01 level,

* at the 0.05 level, and

+ at the 0.1 level.

Source: Own calculations from the Panel Study of Income Dynamics.