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How Children Use Time

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The 1981–82 time allocation data base contains unique data on children's time use, as well as comparison data on family environmental characteristics and behaviors related to the developmental process.[1] In this chapter, we examine those data, discussing in turn methodological issues, parental time use as it relates to children, and the parental age, sex, and other background characteristics that relate to children's time uses.

Survey Design

The data on children's time use were obtained from the 1981–82 panel follow-up of 1975–76 households. As noted earlier, eligible respondents were those who completed at least three out of four possible waves of interviews in 1975 (N=922). In the 1981–82 study, respondents and their spouses (if present) completed 24-hour, open-blocked time diaries (i.e., they reported activities sequentially, with time estimates attached to each activity) during each wave of interviewing. A considerable amount of supplementary information was also obtained. More supplementary information was obtained from both respondent and spouse in 1981 than in 1975, particularly on measures of family functioning. In addition, time diaries and questionnaires were administered to the children of respondents; up to three children between the ages of 3 and 17 were interviewed.

Households were contacted four times between February and December 1981, at intervals of approximately three months. The first contact

was a personal interview; subsequent interviews were by telephone for most respondents. However, because certain measures involving children (such as reading comprehension tests) had to be administered in person, families with children were contacted personally throughout.

Nature of the Questionnaire

The questionnaire administered to children had two components: the time diary and a standardized interview. Children were interviewed twice. In Wave 1, only the time diary was administered; in Wave 3, both the time diary and the standardized interview were administered. Additional information about each child was obtained from the most knowledgeable adult in the household.

Time diary. The children's diary was modeled after the adult diary. Children were asked to report sequentially what they did (beginning at 12:00 a.m. the previous night), when each activity was begun and finished, where they were at the time, whether they were with anyone, and whether they were doing anything else at the same time.

Children's activities were coded into 223 different categories. These 223 activities were collapsed further into 38 general activity categories. Only those activities children 17 and under do not engage in (i.e., attend union unions meetings or meetings of professional organizations, etc.) are not represented in these 38 categories.

Child interview. In addition to the time diaries, the child interview was conducted, covering a wide range of questions. We obtained information about intellectual functioning by administering the reading comprehension test of the Wide Range Achievement Scale and by asking the older children how well they were doing in different areas of their school work. Some questions assessed the quality of family life by probing perceived family cohesiveness, decision-making styles, family organization, and patterns of television use. We asked the older children about educational and occupational aspirations, and how much importance they attached to dating, marrying, having children, going to college, and having a career. Questions for assessing sex-role stereotypes asked who the children thought should do certain household tasks. A section on children's attributions of success and failure in their best and worse school subject was also included. In sum, we asked a variety of questions related to children's psychological well-being: their hopes and goals, attitudes, and beliefs, their current intellectual and emotional well-being, and their family environment.

The total number of questions varied with the age of the child, with older children being asked more detailed questions. Preschool children were not actually interviewed; instead, their parents provided information about what they did the previous day. Children in first through third grade completed the time diary with their parents' help and also

completed a measure of reading comprehension. Children in fourth grade and above provided their own diary information and answered a series of survey questions regarding their family life, how well they were doing in school and why, what things they thought were important in life, and their educational and occupational aspirations. In addition to these questions, junior and senior high school students were asked about school involvement, and family decision-making patterns. High school students were asked also about their work experiences.

Parent interviews. During the third wave additional information about each child and about the family was gathered from either the most knowledgeable parent (usually the mother) or both parents in two-parent households. Parents were asked to evaluate their children's socioemotional and intellectual development. They provided causal attributions of the academic successes and failures of their older children. They were asked about their educational and occupational aspirations for each of their children. In addition, they were asked about the importance of participation in work and family roles for sons and daughters.

Teacher survey. A short survey was sent to a teacher of each of the school-age children. It asked the teachers to evaluate the child's socioemotional and intellectual development. Of 335 school-age children with two waves of data, 61 percent (N=205) also have evaluations of their performance by teachers.

Issues in Using Children's Time Use Data

We will discuss here issues relating to the meaning and quality of the data provided by the children in our sample, including the reliability of their interviews from the perspective of the child's ability to report accurate information, and the reliability of the 24-hour time diary estimates as an indicator of children's time use.

Reliability of children's time diaries. Time diaries were gathered from children aged 3 to 17 years, but only children 6 to 17 years old provided the information directly. Many 6- to 8-year-olds related the previous day's activities with the help of one of their parents.[2] Children as young as 6 seemed competent to provide information about how they use their time when a parent helped them. Children remember *what* they do, and the time estimates reported fit our expectations about how time use should differ according to the child's age (see Table 14.1). For example, older children report more time spent reading, studying, doing housework, watching television, and playing sports, and less time sleeping than younger children. Other researchers have been concerned about whether children have the cognitive capacity to recall time allocations (e.g., Medrich et al., 1980). Since Medrich and his colleagues believed that children did not, they designed their study of children's time use accordingly. We felt that it was very important to involve the children

as informants as much as possible. Consequently, we tried to sidestep the problem of children's cognitive immaturity by allowing parents to participate in their younger children's interviews.

While time diaries of the younger children appear reasonable, in retrospect it does not seem worthwhile to gather 24-hour time diaries from parents for their 3- to 5-year-olds for several reasons. First, the parent may not be able to provide reliable information about what the child is doing during a 24-hour period. For example, if the parent reporting the child's activities (most often the mother) is not home during the day, she can give only vague information about what the child did. Some parents simply say that the child was at nursery school, some say they do not know what the child was doing. Large amounts of unaccountable time translate into large proportions of time recorded in one activity (such as "school time") or of "NA" time (i.e., the parent, the interviewer, or the coder could not ascertain the activity). Either way, we do not obtain any information about the child's particular activities. A diary indicating that the parent does not really know what her child is doing might look like the following:

12:00 a.m. – 8:00 a.m.	sleeping
8:00 a.m. – 8:30 a.m.	got dressed and ate
8:30 a.m. – 8:45 a.m.	drove to nursery school
8:45 a.m. – 3:00 p.m.	at nursery school
3:00 p.m. – 3:15 p.m.	drove home
3:15 p.m. – 3:30 p.m.	changed clothes
3:30 p.m. – 4:50 p.m.	played outside
4:50 p.m. – 5:00 p.m.	helped set dinner table
5:00 p.m. – 5:30 p.m.	ate dinner
5:30 p.m. – 5:45 p.m.	talked to brother
5:45 p.m. – 6:00 p.m.	colored in coloring book
6:00 p.m. – 7:30 p.m.	watched television
7:30 p.m. – 12:00 a.m.	sleeping

In this illustration the parent shows a general knowledge about where the child is and what she or he is doing during the day, but cannot relate much detail about the child's activities. More specific information is obtained from the parent about the child's activities during the time when the parent and child are at home together. If we just wanted to know how much average time a child spends sleeping, in nursery school or daycare, and playing, we could ask a series of "stylized" questions (see Chapter 3) more quickly, and perhaps with equally reliable results.

We also need to consider the kinds of information we want regarding young children's time use. If we want to know what young children do when they play, or what parents and children do when they are together, it might be better to tailor a diary to these activities, getting detailed

reports of time the children spend with their parents or of a child's activities during a typical play period.

Assessing the actual reliability of children's time diaries is not an easy task. Besides using an observer to test the accuracy of recall directly, there are no established methods of determining reliability in the strictest sense of the word. We have used a number of indirect methods that rely on converging evidence to provide a rough sense of reliability.

One method, advocated by the team of Swedish time use researchers at the International Time Use Workshop (Keller et al., 1982), calculates the number of different types of activities recorded in a diary. This method provides a sense of the variety and specificity of response. Other researchers simply use the number of activities recorded, which provides a sense of the density of people's responses.[3] We present both types of figures in Table 14.1, arranged by the age of the children to compare diaries obtained with and without parental help.

The figures in Table 14.1 show an increase in both the numbers and variety of activities by the age of the child on weekend days. This effect could reflect a developmental increase in the number and variety of children's activities. Alternatively, it could mean that our coding scheme does not provide very precise descriptions of the activities of very young children (although our coding scheme is much more detailed than others developed to date). For example, young children spend large amounts of time "playing" (see Table 14.5). Playing is defined as outdoor play, indoor play, playing with toys, and pretend play. The majority of children's play time falls into the general categories of indoor and outdoor play. In contrast, older children did not report much time "playing." They reported spending much more time at "sports," which has a large assortment of codes. Consequently, when totaling up the number of different activities reported, young children will appear to have less variety than older children even if the young children actually engage in a wide variety of play activities. In support of this alternative explanation of the age difference in variety of activities reported, the number of weekday diary activities reported and the amount of time reported as "playing" are negatively related ($r = -.11$, $p < .05$).

In addition to comparisons across age groups of children, we can compare the number of activities that children report with an estimate of the number of activities reported by adults on weekdays and weekend days. In the 1981 survey, adult respondents reported more and a greater variety of weekday activities than children; however, the reverse was true for weekends. This pattern suggests little difference in the reliability of adult and child diaries. Rather it suggests more subtle differences in adult and child activity patterns, or perhaps the salience of weekends and weekdays. Additionally, reports from interviewers indicated that children enjoyed telling interviewers what they did all day

Table 14.1

NUMBER AND VARIETY OF ACTIVITIES THAT CHILDREN REPORT IN WEEKDAY AND WEEKEND-DAY DIARIES

	Age of Child				
	3–5 yrs (N=67)	6–8 yrs (N=69)	9–11 yrs (N=93)	12–14 yrs (N=73)	15–17 yrs (N=87)
Weekday:					
Number of activities	24.0	25.4	26.2	26.7	27.5
Variety of activities	12.9	13.8	14.0	14.3	14.5
Weekend:					
Number of activities	26.4	28.9	27.9	30.1	32.1
Variety of activities	13.4	14.5	14.4	15.3	16.4

long. They did not seem to tire in the telling of their day, even though it often took them as long as 20 minutes to complete their story.

All the information we have available indicates that children and parents are able to provide interviewers with good information about their activities. Children like talking about their activities. They seem to give, on the average, as much information about themselves as adults, and their time estimates conform to our intuitions regarding how children use their time. There may be better ways of getting detailed information about the activities of the very youngest group. However, one advantage of having similar measures for all age groups (as we do) is that we can compare time use among children across all age groups, instead of being limited to analyses within subgroups of children.

Accuracy of Interpreting Differences in Children's Time Use

So far our discussion has focused on children's and parents' ability to provide rich and varied descriptions of children's time use. We will now discuss the interpretability of differences in time spent in low-frequency

activities, the meaning of possibly misleading codes, and developmental effects masked by the process of coding.

Table 14.2 shows the number of children engaging in the different activities on weekdays and weekend days. This table illustrates the kinds of activities generally reported in a time diary, and those not reported. Activities mentioned by fewer than 10 percent of the sample meet standard criteria for skewness and can be considered not well estimated for individual households by time diaries. These activities include babysitting, obtaining services (going to the bank, doctor, dentist, cleaners, etc.), helping others, being at the babysitter's or daycare, participating in functions of helping organizations, attending events (movies, concerts, museums), doing hobbies, and being read to. Some of these activities show low frequencies because they are not frequently or regularly done (i.e., the probability that a day would be sampled in which the activity would *not* be done is high). Others show low frequency because the activities are likely to be recorded as a secondary activity rather than a primary activity.

Attending "events," doing hobbies, and attending meetings are examples of low-frequency cases. They are activities that are done infrequently but may consume a lot of time when they are actually engaged in. The time both adults and children spend doing these activities is probably inaccurately represented for individual households by the 24-hour time diary, although at the population level, the time estimates accurately represent the proportion of time allocated to these activities. Alternative strategies should be developed to capture these activities for individual households.

In contrast, being at the babysitter's or at daycare are "low priority codes"—they are coded only when no other activity is reported. If the child said he or she was playing while at daycare, then "playing" was coded. The fact that the child was at the daycare center must be captured by the response to the question, "Where were you?" and since we have not yet coded responses to this question, our activity estimates undoubtedly underestimate the time children spend at these locales. Daycare is also underestimated because parents seem to include it under the category "at school" rather than "at daycare." Again, more detailed probing may be necessary to get a more accurate estimate of the time children spend at these locations.

Activities such as "conversations with household members," "visiting," and "listening to the radio" are often reported as secondary activities. "Visiting," for example, means that the child was talking with someone while somewhere other than at home. That younger children are less likely than older children to "visit" may say something about the importance of conversation in older children's social relations, rather than about the amount of time the children were actually visiting at someone else's house.

Table 14.2

LIST OF MAJOR ACTIVITIES AND NUMBERS OF CHILDREN ENGAGING IN EACH ACTIVITY, BY AGE

	3 to 5 yrs (N=67)		6 to 8 yrs (N=69)		9 to 11 years (N=93)		12 to 14 yrs (N=73)		15 to 17 yrs (N=87)	
	WD	WE	WD	WE	WD	WE	WD	WE	WD	WE
Market work	0	0	2	2	3	5	13	13	13	12
Household work:										
Female-typed	17	19	24	22	29	50	34	51	52	45
Male-typed	1	1	3	5	9	14	5	6	7	15
Not sex-typed	6	7	11	17	19	27	16	22	18	19
Child care activities	10	8	4	3	2	9	2	6	1	2
Babysitting	0	0	0	0	0	3	0	4	0	4
Shopping	16	14	4	19	19	24	17	20	27	35
Obtaining services	4	4	4	9	7	11	7	9	9	8
Personal care	65	65	68	65	93	88	73	69	86	85
Eating	67	67	69	69	93	92	73	72	87	86
Sleeping	65	66	69	69	92	91	71	73	86	85
Helping other	5	5	3	5	9	10	7	9	13	9
At babysitter's	4	0	2	0	0	0	0	0	0	0
Receiving care	14	1	6	2	2	4	3	4	0	1
School	36	0	61	0	81	0	68	0	79	0
Studying	4	3	14	4	44	25	32	15	40	24
School travel	32	0	57	0	78	0	67	0	76	0
At daycare	1	0	1	0	2	0	0	0	0	0
Helping organizations	0	0	0	0	0	0	0	0	0	1
Church	3	20	10	26	7	36	6	17	3	26
Family organizations	0	1	3	0	2	3	1	1	4	1
Social events	2	6	2	14	6	9	7	9	12	11
Visiting	13	23	12	23	20	40	18	35	28	53
Sports	6	4	19	19	25	35	25	38	39	25
Outdoors activities	11	11	3	18	15	28	8	18	17	25
Hobbies	0	2	4	6	4	5	8	9	8	6
Arts activities	9	8	9	10	10	11	4	9	10	10
Games	8	6	7	9	7	5	6	5	4	8
Playing	66	65	55	59	61	66	20	26	15	22
TV viewing	54	51	59	55	83	81	63	64	72	74
Listening to music	5	1	6	4	12	11	15	24	27	28
Reading	10	6	13	5	18	20	17	17	23	20
Being read to	8	7	7	6	1	1	0	0	0	0
Household conversation	28	21	19	14	28	33	35	31	57	45
Other passive leisure	12	10	6	13	8	22	12	20	14	19
With an adult on errands	19	9	4	3	3	7	1	1	1	4

Notes: WD=Weekday activity; WE=Weekend activity

Other activities, such as market work and taking care of children, are of course not done by many children. Consequently, the low frequency estimates in Table 14.2 are probably an accurate reflection of the occurrence of these events in different age groups. But the time estimates based on population means will have large sampling errors because of the highly skewed distribution, and the diary measures for individual households will tend to be unreliable estimates of the overall allocation of time to these activities.[4]

One characteristic of young children's behavior that cannot be captured directly by the time diary is the degree to which activities are shared and supervised by parents. For example, a 5-year-old boy may say that he "helped his mother fix dinner" by sitting on a stool in the kitchen licking spoons; a 15-year-old boy might give the same response because he set the table or made the salad. Both children would receive the code for meal preparation, regardless of the degree to which their activities really described what we as adults mean by meal preparation, because they both claimed to be helping to fix dinner. This example also illustrates the possibility that children of different ages may report doing the same thing (thus receiving the same code) when the activities were actually quite different. Since this is a problem of bias in reporting, it cannot be eliminated without additional information from a trained observer. Its potential influence on the data should, however, be noted, and age-related inferences based on these data should therefore be made with caution.

Age differences in behavior might also be understated by the diary because of the variety of behavior subsumed under one code. For instance, there is no difference among age groups in the *amount* of *time* that children report they spent in artistic activities (see Table 14.5). However, there is a substantive difference in the kinds of activities that might be considered "artistic" for children of various ages. For instance, younger children spend time "painting and drawing," meaning coloring with crayons and finger painting. Older children's artistic activities are much closer to the adult meaning of the term.

In sum, issues concerning the nature of activities reported by different aged children raise questions about the kind of information we can expect to get from children's diaries. While some age effects emerge in Table 14.2 (note the differential participation by age in household work, sports, playing, listening to music, and reading), other age differences may be masked by the coding procedures and by shifts in response biases.

Parents' Time Use

This section will outline some of the ways in which mothers and fathers use their time. We include a section on parents' use of time in a

chapter on children's time use to provide a context for understanding children's behavior. We will discuss general differences between mothers' and fathers' time allocation, and parents' time use as it varies by maternal employment status, parents' educational attainment, and the number of babies in the household.

On the whole, when mothers' and fathers' time use differs, it predictably varies according to sex-role stereotypes. Fathers work longer hours in the labor market than mothers. On the other hand, mothers spend substantially more time than fathers doing household work and taking care of their children (as measured by time spent in child care activities). Mothers and fathers spend similar amounts of time in leisure activities like reading, listening to music, sports and other recreational activities, and watching television. Television viewing is the most time-consuming leisure activity for parents—an average of an hour and a half on a weekday and even more (for fathers) on weekend days.

In sum, the amount of time mothers and fathers allocate to different household and market-work activities varies in a traditional sex-typed manner. Fathers account for most of the hours that parents contribute to the paid labor force, and most of the work done inside the home is contributed by mothers. This is in keeping with other findings (Walker & Woods, 1976; Veroff, Douvan & Kulka, 1981), and with the data reported in Chapters 7, 10, 11, and 13. Parents' allocation of time to nonwork activities does not appear to vary significantly according to the sex of the parent, with one exception: Fathers watch more television than mothers on weekends.

Maternal Employment and Parents' Use of Time

While a mother's employment status has a substantial effect on the way she uses her time, it does not seem to influence fathers' time use noticeably. For instance, employed mothers spend considerably less time during the week doing housework than nonemployed mothers, less total time taking care of children, less time eating and sleeping, and more time in personal care activities. Fathers whose wives are employed differ from other fathers in only two ways: They are less likely to spend time taking care of a baby (and probably less likely to have a baby), and less likely to do grocery shopping and other household errands. Since employed mothers spend many fewer hours a week than nonemployed mothers doing housework, and since their respective husbands (and children, as we will see) do not differ in their contributions to household work, we conclude that dual-earner families as a whole spend less time in household production than single-earner families: Dual- and single-earner families may have different standards of cleanliness, or dual-earner families may either have less household work to do than single-earner families or be more efficient or better organized workers.

Nonemployed mothers spend more time taking care of babies and playing with their children. This difference in time use reflects the greater likelihood that nonemployed mothers have preschool children in the household.

Parents' Educational Attainment and Use of Time

What difference does a parent's educational attainment make on how a mother or father spends her or his time? College-educated parents spend more time reading to their children than lesser educated parents and they watch less television. Additionally, college-educated mothers are more likely to be in school and to spend time studying than other mothers.

Although there are few differences in parents' time use according to their educational attainment, those differences have important implications for children's social and cognitive development. When parents spend time reading to their children, they expose their children to a more diverse language use and nurture reading skills. They also communicate their value and enjoyment of reading. Similarly, mothers pursuing additional education may communicate their value of educational attainment. They may also provide their children, particularly their daughters, with the model of interest in learning. Also parents who watch little television communicate their (negative) values and preferences for watching television, and by implication their (positive) preferences for other leisure activities. We will explore some of the relationships between parents' television use, children's television use, and certain outcome variables later in this chapter.

Mothers' Marital Status and Mothers' Time Use

The most noticeable difference between single and married mothers in our sample is that single mothers spend more time in market work than married mothers. On the average, single mothers devote about six hours a day and married mothers devote about three-and-a-half hours a day to work in the labor force.

Single and married mothers differ in their use of discretionary time in one important way. Single mothers spend significantly more time than married mothers watching television on weekends: about two-and-a-half hours compared with roughly one-and-a-half hours. Why do single mothers spend so much time watching television on weekends? Television may be an activity that single mothers and their children do as a way to spend time together. Indeed, when we discuss children's time use, we will discover that children of single mothers watch more television on weekends than other children, suggesting that this hypothesis may be correct.

Presence of Babies in the Household and Parents' Time Use

Up to now we have focused on differences among parents and the effects on their time use in order to provide a context for interpreting differences in children's time use. Analyses of parents' time use according to the presence of babies (children three years or younger) in the household gives us a sense of the way family structure might affect parents' time use.

Both mothers and fathers of babies spend considerably more time in activities related to child care than do other parents. Among mothers who have at least one baby, it is possible to detect a reorganization of work and family activities. On the average, mothers with babies are less likely to work outside the home than other mothers; also, if a mother with a baby does work outside the home, her work hours are likely to be shorter than other mothers'. Interestingly, mothers who have a baby are likely to spend more time talking to and visiting nonhousehold members on weekdays. This pattern suggests suspension of labor market activities and adjustment to the lack of contact with coworkers by establishing alternative communication networks to reduce feelings of isolation.

Our observations of the effect of babies in the household on parents' time suggest there are several ways in which older children's time might be affected by the presence of a baby. If there is little flexibility in parents' schedules for expanding their time allocation to activities directly involving their children, the amount of parental attention an older child receives might be greatly diminished. If the presence of babies spurs the parents to spend more time together as a family or if the parents eliminate some activities in favor of family or child-care activities, the attention older children receive might increase when a baby is born.

These descriptions of parents' time use according to maternal employment and marital status, parents' educational attainment, and the presence of babies in the household give us an idea of the different family contexts within which children develop. Since parents' work activities generally conform to sex-role stereotypes, we expect to observe similar patterns among their children. We also expect that the time allocations of children with high-school-educated parents will differ from children of more highly educated parents in ways similar to differences observed in the parents. Since there were few differences in parents' activities according to the mothers' working status, we do not expect many differences in their children's activities, except perhaps that preschool children should spend more time in nursery school or daycare. Neither do we expect to observe many differences between children with married and single mothers, because the structure of mothers' time use does not look substantially different, even though the family structure

differs. With these hypotheses in mind, we will investigate the differences in children's time use according to these same family characteristics.

Children's Time Use

What do children do all day? We begin to get a picture of how children use their time by looking at Tables 14.3 and 14.4, showing the hours and minutes spent in a selection of primary activities on weekdays and weekend days. On weekdays, children spend at least 30 percent of their day sleeping, approximately 20 percent of their day in school, and 10 percent of their day eating, washing, dressing and participating in other personal care activities. In sum, at least 60 percent of a child's weekday is consumed by nondiscretionary activities. On weekends, about half of a child's time is spent in nondiscretionary activities, with some variation depending on the age and sex of the child. (The relatively large proportion of time teenage girls allocate for personal care activities, however, raises a question about the degree to which these activities are nondiscretionary versus leisure.) Since the allocation of discretionary time (time in which the child can choose to engage in different activities) depends on a variety of other variables such as children's age and sex, and family characteristics such as maternal employment status, single- vs. two-parent families, and parents' educational attainment, we will discuss discretionary time use in relation to these variables.

Differences Between Boys' and Girls' Time Use

The estimates of time spent in the activities presented in Tables 14.3 and 14.4 show remarkably few differences between boys' and girls' time use. Relative to the number of age differences, sex differences are relatively few. The differences that do emerge suggest that involvement in some activities such as sports and housework are guided to a certain extent by sex-role stereotypes. Girls spend more time than boys on weekdays and weekends doing household work, in personal care activities, and eating, and less time playing sports (also see Table 14.5). On weekdays girls spend more time than boys talking to family members.[5] On weekends, girls spend less time watching television than boys. This finding is at odds with other studies revealing no major sex differences in television-viewing patterns (e.g., Medrich et al., 1982; Peterson & Zill, 1980).[6] Despite this sex difference, however, it is important to note that television viewing is the major free-time activity for most children. Only playing sports and games come even close to consuming as much of children's free time.

Table 14.3

MEAN *HOURS:MINUTES* SPENT IN MAJOR ACTIVITIES BY AGE AND SEX: WEEKDAYS

Activity	Age 3–11		Age 12–17	
	Boys (N=118)	Girls (N=111)	Boys (N=77)	Girls (N=83)
Market work	0:16	0:00	0:23	0:21
Household work	0:17	0:21	0:16	0:40
Personal care	0:43	0:44	0:48	1:11
Eating	1:21	1:18	1:13	1:05
Sleeping	9:44	9:50	8:24	7:58
School	4:12	4:19	5:14	5:42
Studying	0:14	0:19	0:29	0:37
Church	0:07	0:04	0:03	0:07
Visiting	0:16	0:09	0:17	0:25
Sports	0:25	0:12	0:52	0:37
Outdoors	0:10	0:07	0:10	0:10
Hobbies	0:03	0:01	0:07	0:04
Art activities	0:04	0:04	0:12	0:06
Playing	2:17	1:55	0:37	0:13
TV	1:57	2:08	2:23	1:48
Reading	0:09	0:07	0:10	0:13
Household conversations	0:10	0:11	0:21	0:30
Other passive leisure	0:09	0:14	0:21	0:14
NA	0:22	0:25	0:14	0:17
Percent of time accounted for by above activities	93.9%	92.2%	93.1%	91.9%

Age Differences

Table 14.5 presents the average time spent on the 18 major activities by each of five different age groups. Differences in time use among age groups follow a logical pattern. Older children spend more time on weekdays and weekends doing household work and market work, studying, visiting friends, watching television, and in other passive leisure activities like listening to records or to the radio.[7] Older children spend

Table 14.4

MEAN *HOURS:MINUTES* SPENT IN MAJOR ACTIVITIES BY AGE AND SEX: WEEKENDS

Activity	Age 3–11		Age 12–17	
	Boys (N=118)	Girls (N=111)	Boys (N=77)	Girls (N=83)
Market work	0:07	0:04	0:58	0:25
Household work	0:32	0:43	0:46	1:29
Personal care	0:42	0:50	0:35	1:16
Eating	1:18	1:24	0:58	1:15
Sleeping	10:25	10:19	9:10	10:12
School	—	—	—	—
Studying	0:04	0:09	0:25	0:25
Church	0:53	1:01	0:40	0:36
Visiting	0:23	0:37	0:46	0:53
Sports	0:33	0:23	1:05	0:26
Outdoors	0:30	0:23	0:36	0:19
Hobbies	0:03	0:04	0:04	0:07
Art activities	0:04	0:04	0:11	0:09
Playing & games	2:57	2:46	0:35	0:24
TV	3:01	2:02	3:07	2:20
Reading	0:12	0:10	0:12	0:19
Household conversations	0:14	0:09	0:24	0:30
Other passive leisure	0:16	0:17	0:43	0:33
NA	0:20	0:29	0:10	0:04
Percent of time accounted for by above activities	92.7%	89.3%	88.4%	89.0%

less time eating, sleeping, "playing," and going to church. Their passive leisure activities in general appear more varied than those of younger children: e.g., they talk to friends, listen to music, and watch television. Younger children's passive leisure activities consist primarily of watching television.

Age effects for most activities appear to be linear, with the exception of television watching. Children aged 11 and 12 watch more television than children of any other age, including an average of five hours per

Table 14.5

MEAN NUMBER OF HOURS:MINUTES CHILDREN SPEND IN MAJOR ACTIVITIES

	Weekday					Weekend					
Activities	3-5 yrs	6-8 yrs	9-11 yrs	12-14 yrs	15-17 yrs	3-5 yrs	6-8 yrs	9-11 yrs	12-14 yrs	15-17 yrs	Sig Effects(a)
Market work	-	0:14	0:08	0:14	0:28	-	0:04	0:10	0:29	0:48	
Personal care	0:41	0:49	0:40	0:56	1:00	0:47	0:45	0:44	1:00	0:51	A,S,AxS(F>M)
Household work	0:14	0:15	0:18	0:27	0:34	0:17	0:27	0:51	1:12	1:00	A,S,AxS(F>M)
Eating	1:22	1:21	1:13	1:09	1:07	1:21	1:20	1:18	1:08	1:05	A
Sleeping	10:30	9:55	9:08	7:53	8:19	10:34	10:41	9:56	10:04	9:22	A
School	2:17	4:52	5:15	5:44	5:14	-	-	-	-	-	
Studying	0:02	0:08	0:29	0:33	0:33	0:01	0:02	0:12	0:15	0:30	A
Church	0:04	0:09	0:09	0:09	0:03	0:55	0:56	0:53	0:32	0:37	A
Visiting	0:14	0:15	0:10	0:21	0:20	0:10	0:08	0:13	0:22	0:56	A(WE only)
Sports	0:05	0:24	0:21	0:40	0:46	0:03	0:30	0:42	0:51	0:37	A,S(M>F)
Outdoors activities	0:04	0:09	0:08	0:07	0:11	0:08	0:23	0:39	0:25	0:26	
Hobbies	0:00	0:02	0:02	0:04	0:06	0:01	0:05	0:03	0:08	0:03	
Art activities	0:05	0:04	0:03	0:03	0:12	0:04	0:04	0:04	0:07	0:10	
Other passive leisure	0:09	0:01	0:02	0:06	0:04	0:06	0:10	0:07	0:10	0:18	A
Playing	3:38	1:51	1:05	0:31	0:14	4:27	3:00	1:32	0:35	0:21	A,S(M>F)
TV	1:51	1:39	2:26	2:22	1:48	2:02	2:16	3:05	2:49	2:37	A,S,AxS(M>F)
Reading	0:05	0:05	0:09	0:10	0:12	0:04	0:09	0:10	0:10	0:18	A
Being read to	0:02	0:02	0:00	0:00	0:00	0:03	0:02	0:00	0:00	0:00	A
NA	0:30	0:14	0:23	0:25	0:07	0:52	0:07	0:14	0:04	0:09	

(a) Effects are significant for both weekday and weekend times unless otherwise specified.
A=Age effect, significant at $p < .05$, for both weekday and weekend activities, unless specified.
S=Sex effect, significant at $p < .05$; F>M, M>F = Females spend more time than males, or vice versa.
AxS=Age by sex interaction, significant at $p < .05$

week more than 13- to 17-year-olds.[8] These findings replicate Lyle and Hoffman's (1972) and Peterson and Zill's (1980) findings that 11- and 12-year-old children watch more television.[9]

The rather large amounts of time children spend watching television has long been a focus of developmental psychologists concerned about children's moral and cognitive development and the acquisition of aggressive behavioral styles.[10] This topic also caught the interest of the Surgeon General, whose concern focused on the socialization of a generation of young television viewers into responsible and productive adults. Given the importance attached to these issues, we will discuss analyses predicting the amount of television watching among boys and girls as well as relationships between the allocation of time to television viewing and other activities.

To measure the total amount of time that children spend watching television, we combine the time spent in both primary and secondary television viewing, then multiply this aggregate time estimate by 5.0 for school days and by 2.0 for nonschool days. By this measure, boys, on average, spend 19.4 hours a week watching television, and girls 17.8 hours per week. However, 11- and 12-year-old boys watch 26 hours of television per week. As discussed earlier, this group watches more television than any other age group of boys or girls.

Aside from the age and sex of the child, certain family characteristics were found to be potent indicators of the amount of time children spend watching television. Foremost among them are family television-viewing patterns, such as how much television mothers and fathers watch, whether the television is generally on, and whether people are actually watching it while it is on. Interestingly, the relationship between mothers' and children's television watching does not vary significantly by the sex of the child (Beta = .15, $p < .01$). But fathers' viewing seems to have a greater effect on their sons' viewing than on their daughters'. This finding speaks to the socialization effects mothers and fathers have on their children: Sons, more than daughters, closely note and imitate their fathers' recreational behavior; while mothers have a less predictable yet similarly greater effect on their daughters than on their sons. The mothers' educational attainment is also an important predictor of the amount of time children spend viewing (Beta = $-.25$, $p < .01$), other things being equal.

One of the major arguments against children watching television is that they *could* be spending their time doing more enriching activities, but the question is, *would* they? To get a sense of the way in which the time use of children who do not watch a lot of television differs from heavy television viewers, we regressed each activity on total television viewing, age, and sex. Analyses revealed few differences between groups. Television viewing appears to displace time spent in personal

care activities on weekends and during the week, and time spent in church on weekends, all other things equal.

These findings suggest that heavy television viewing does not necessarily reduce time spent in developing cognitive skills, but that does not rule out the possibility that something about television watching itself may inhibit the development of social or intellectual skills. In fact, the more television 9- to 17-year-old children watch during the week, the lower are their scores on a standardized reading comprehension measure ($r = -.15$, $p < .05$), excerpted from the Wide Range Achievement Test.[11] Closer inspection of the data showed that high levels of weekend television viewing showed a much stronger negative relationship to reading comprehension scores ($r = -.17$, $p < .01$) than did weekday viewing ($r = -.09$, NS). These results may reflect a differential impact of weekday and weekend content (e.g., situation comedy vs. cartoons) on the development of cognitive abilities.

Interactions Between Age and Sex

Interactions between age and sex are observed in household work, personal care activities, sports, and television viewing (discussed above). Older girls spend more time in personal care activities and household work than others, and older boys spend more time in sports than others.

The significant interactions suggest that the sex differences discussed earlier result from the rather large differences between older adolescent boys' and girls' time use rather than from differences between elementary school boys and girls. The pattern of divergence in the time use of adolescent boys and girls suggests increased conformity to sex-role stereotypes. For example, in comparison to younger girls the adolescent girls spend more time in household work, especially on traditionally female household tasks. In contrast, adolescent boys spend more time in organized sports than the younger boys.

The development of self-concepts of ability and achievement strivings shows a similar divergence between girls and boys during adolescence. Boys and girls do not differ in their ratings of their own abilities to do well in mathematics until they reach high school. In high school, girls and boys perform equally well in math—but girls become less convinced of their own ability to do math, while boys' attitudes do not change. What could cause this kind of effect? Meece et al. (1982) proposed that an interaction between expectancies for success and value of the activity determines whether an activity is pursued, and they further distinguished between the value of performing the task (utility value) and the value of succeeding at the task or the attainment value (see also Eccles, 1983).

The expectancy side of the model does not seem to help in explaining differences between adolescent boys and girls in television watching, personal care, or household work. The differential utility and attainment values of the different activities to boys and girls may prove useful for interpreting differences in allocations of time that emerge at adolescence. Girls for whom dating and popularity are important may spend more time in personal care activities (making themselves attractive) than do boys in general and more than do girls for whom these aspects of life are less important. A similar effect may exist for involvement in athletic activities.

Relationship Between Mothers' Marital Status and Children's Time Use

The kinds of activities engaged in by children may be affected by the mothers' marital status because a family with one parent is necessarily organized differently from a family with two parents. In our sample, 85.7 percent of single mothers were employed, while only 61.9 percent of married mothers were employed. Of the employed mothers, single mothers worked in the labor market an average of eight hours a day, while married mothers worked in the labor market an average of just over five hours a day. A longer work day is likely to mean that the mother would not be at home at times when school is not in session, so alternative arrangements for child care would have to be made. Older children might spend more time at school, participating in extracurricular activities; younger children may go to nursery school or to a friend's house instead of staying home. Single mothers may also need more help around the house from their children than do married mothers.

Table 14.6 shows the average amount of time children of married and single mothers spend in major activities. Asterisks next to time estimates indicate that children of married and single mothers differ in the time allocated to that activity. An "A" or an "S" next to the time estimate indicates the presence of an interaction between mothers' marital status and the age or sex of the child. We will discuss possible interpretations of these interactions.

Time estimates presented in Table 14.6 indicate that children of single mothers sleep less than children with two parents, and that the differences between the two groups decline with age. Three- to 5-year-old children of single mothers sleep over two hours less per night than children of the same age whose mothers are married. There is no difference between the two groups of 12- to 14- or 15- to 17-year-olds. The 3- to 5-year-olds may sleep less because their mothers must get them to nursery school or daycare first thing in the morning before they go to work. In fact, 3- to 5-year-old children of single mothers spend significantly more time in school than same aged children of married mothers (diff = 239.3 minutes, $p < .05$). Six- to 12-year-old children of single mothers may take on more responsibilities at a younger age (e.g.,

Table 14.6

MEAN NUMBER OF *HOURS:MINUTES* CHILDREN OF MARRIED AND SINGLE MOTHERS SPEND IN MAJOR ACTIVITIES

	Weekday		Weekend	
Activity	Mother Married (N=346)	Mother Single (N=43)	Mother Married (N=346)	Mother Single (N=43)
Market work	0:13	0:16	0:22	0:00
Household work	0:25	0:20	0:47+	1:03+
Personal care	0:49	0:47	0:49	0:54
Eating	1:14	1:15	1:14	1:11
Sleeping	9:14**A	7:57	10:06	9:55
School	5:00**A	6:02	–	–
Studying	0:21	0:34	0:12	0:19
Sports	0:26	0:40	0:35	0:25
Outdoor activities	0:09	0:03	0:24	0:36
Hobbies	0:03	0:00	0:04	0:04
Art activities	0:06	0:00	0:07	0:00
Playing	1:30*A	0:28	1:47	1:33
TV viewing	2:02	2:05	2:31*	3:16
Reading	0:10	0:03	0:13	0:05
Being read to	0:01	0:00	0:01	0:00
Other passive leisure	0:05	0:05	0:10	0:16
NA	0:16	0:47	0:16	0:25

*Difference by mother's marital status, controlling for sex and age of child, $p < .05$; **$p < .01$; +$p < .10$.

A = Interaction between mother's marital status and age of child, $p < .05$; A+ = $p < .10$.

taking care of themselves, or doing household work without having to be told), and their mothers may reward them by allowing them the privilege of establishing their own bedtime.

Children of single mothers are slightly more likely to help out with housework on weekends, controlling for the sex and age of the child. The sex and age of the child and the interaction of age and sex account for a fairly large proportion of the variance in the amount of household work performed by the child ($R^2 = .21$); mothers' marital status is a marginally significant predictor over and above these controls. There were no interactions between mothers' marital status and children's age or sex. The lack of any effect on weekdays and the marginal effect on weekends suggests that single mothers do not require their children to do much more work around the house than married mothers.

Children of single mothers watch an average of one hour more of television on a weekend day than children with two parents. No interactions between mothers' marital status and age or sex of children were evident. This result is interesting in light of the fact that single mothers watch more television than married mothers. As proposed earlier, single mothers may spend more time than others watching television with their children. Television is inexpensive entertainment, and this may be an important consideration for mothers supporting a family on a single (and often low) income.

Maternal Employment Status and Children's Time Use

Just as the presence of only one parent in the household affects the structure of children's time use, maternal employment status may also affect it. While mothers and fathers are at work, they must be assured of their children's safety. If the children are old enough, they may be allowed to stay home alone and watch television, or they may take part in extracurricular activities at school, or even attend art, dance, or sports lessons at a local community center. On weekends, family time may also be more structured. Parents may want to spend that time doing things together, rather than allowing the child to spend time playing with friends away from home. In fact, older children (aged 14–17) are generally much more likely to say that their families seldom do things together. But older children whose mothers work outside the home are much more likely to report doing more things together as a family than older children whose mothers do not work outside the home (lambda = 0.27, $p < .05$).

Time use measures present an approximate picture of the impact of maternal employment status on children's lives. Table 14.7 presents the mean hours and minutes that children of employed and nonemployed mothers spend in major activities. The notation used in Table 14.7 is similar to that used in Table 14.6.

Mothers who work outside the home have less time available for housework activities than nonemployed mothers, and in fact spend less time than other mothers doing these activities. But children of employed mothers do not begin to compensate for the differences between the two groups in the amount of time spent in household work. The only effect of maternal employment on children's allocation of time to household work appears in a marginally significant interaction between age and employ-

Table 14.7

MEAN NUMBER OF *HOURS:MINUTES* CHILDREN OF EMPLOYED AND HOMEMAKER MOTHERS SPEND IN MAJOR ACTIVITIES

	Weekday		Weekend	
Activity	Mother Employed	Mother Homemaker	Mother Employed	Mother Homemaker
Market work	0:12	0:15	0:18	0:24
Household work	0:25A+	0:24	0:51	0:47
Personal care	0:51	0:48	0:50	0:50
Eating	1:14	1:12	1:11	1:14
Sleeping	8:53*	9:30	10:02	10:03
School	5:08**A	4:03	–	–
Studying	0:23	0:22	0:14	0:13
Sports	0:28	0:25	0:34	0:24
Outdoor activities	0:08	0:10	0:24	0:28
Hobbies	0:04	0:02	0:02	0:05
Art activities	0:05	0:06	0:04	0:10
Playing	1:13	1:39	1:56	2:01
TV viewing	1:51*A	2:19	2:47	2:19
Reading	0:08	0:09	0:12	0:11
Being read to	0:01	0:01	0:00	0:02
Other passive leisure	0:02	0:08	0:09	0:11
NA	0:25	0:11	0:21	0:09

*Difference by mother's employment status, controlling for sex and age of child, $p < .05$; **$p < .01$.

A = Interaction between mother's employment status and age of child, $p < .05$; A+ = $p < .10$.

ment status (B = −.09, $p < .06$). Inspection of means and mean differences in an analysis of variance shows increasing time spent on household work with increasing age among children of employed mothers (3–5 years, $\bar{X}$ = 8.2 min.; 15–17, $\bar{X}$ = 27.3 min.). But older and younger children of nonemployed mothers report equal contributions to household work (3–5 years, $\bar{X}$ = 17.1 min.; 15–17, $\bar{X}$ = 19.7 min.). This effect may be due partially to the fact that nonemployed mothers spend more time than employed mothers at home with their children. Their children may be more likely to be with them when they are doing

housework; and their children may be more likely to claim that they were "helping with housework," when they may really just be watching their mothers work.

As with the effects for mothers' marital status, there is a relationship between employment status and the time children spend sleeping and in school. The strength of this relationship similarly lies in the differences between 3- to 5-year-old children of employed and nonemployed mothers. Three- to 5-year-old children of employed mothers spend an average of 3.4 hours a day in school, while the same aged children of nonemployed mothers spend an average of just over one hour a day in school. These relationships reinforce our interpretation of relationships that appeared between mothers' marital status and the time 3- to 5-year-olds spend sleeping and in school. Mothers are likely to use nursery school as a form of daycare for their preschoolers, perhaps getting them up earlier and delivering them to school on their way to work.

Maternal employment status also has an impact on the amount of television children watch on weekdays; this relationship varies according to the child's age. Plotting the means for each group showed little change among different aged children of nonemployed mothers in amount of television viewing. In contrast, as children of employed mothers increased in age, so did their television viewing, peaking in the 10- to 12-year age group. An analysis of variance, testing for differences between children of employed and nonemployed mothers within age groups, showed significant differences between the two groups of children in the younger age groups years (3–5 years, $F = 8.5$, $p < .01$; 6–9 years, $F = 4.69$, $p < .05$) but no differences among older children. This difference in time use might be a result of differential after-school time use. Younger children of employed mothers may be more likely to spend their time at daycare centers or babysitters' houses, where they may be less likely to watch television than when they are at home. A second hypothesis is that employed mothers of younger children, who provide much of the diary information, cannot know what their children are doing while they are at work—even if they know the child is home with older siblings or at some other place—and therefore would not be as likely to mention that the child was watching television during this time.

Indicators of Socioeconomic Status and Children's Time Use

Research has shown differences in the value parents attach to having children (Rainwater, 1960; Hoffman et al., 1978), in child-rearing practices, and in the goals parents have for their children (Kohn, 1969; Rubin, 1976) that relate to the socioeconomic status of the parents. For example, parents of middle-class children advocate the importance of

independent thinking, while working-class parents emphasize obedience and conformity. Furthermore, working-class parents believe that limit setting will aid in instilling these values. Middle-class parents emphasize emotional support and believe that limit setting inhibits the development of self directedness. The differences between child-rearing attitudes of working- and middle-class parents are geared to the kinds of values they have for their children; and the structure of their children's time use may vary accordingly.

Tables 14.8 and 14.9 describe the average time use of children according to their parents' level of educational attainment. Notations in the effects columns indicate the strength of effects and the presence of interactions. We ran regressions to test the strength of main effects of educational attainment and interactions between attainment, age and sex of the child. The discussion of the results will focus first on the similarity of the relationships between mothers' and fathers' education on children's time use. Following this, we will discuss the relationships that appear only for fathers or mothers.

Fathers' and mothers' educational attainments seem to relate similarly to the amount of time children spend on personal care, sleeping, studying, playing sports, watching television, reading, and being read to. Children whose father and/or mother have at least a college degree spend more time than other children washing, dressing, doing homework, reading, and being read to; and they spend less time watching television. As discussed earlier, fathers with at least a college degree spend less time than others watching television. Perhaps these parents set an example for their children, and the children model their parents' behavior. Alternatively, it could be that television watching is a family activity in most households and if parents are watching television, their children are also likely to be watching it. Additionally, other research has shown that middle-class parents, more than working-class parents, value independent thinking over conformity (Kohn, 1963). Perhaps a high value of reading and thinking accompanies parental encouragement of independence. So, the greater likelihood for children of more highly educated parents to read and study more and to watch television less may result partly from children modeling parents' behavior and partly from children responding to parental encouragement and values.

It is not altogether clear why children from the more highly educated families spend more time on personal care. Earlier analyses of parents' time use and educational attainment suggest that the more highly educated parents may engage in a wider variety of active and passive leisure activities. If children accompany their parents on these excursions, they may spend proportionally more time preparing to go. Another difficult relationship to interpret is parents' educational attainment and the time children spend sleeping (partial $r = -.16$), controlling for age and sex effects. There is no apparent structural reason for this

Table 14.8

AVERAGE HOURS:MINUTES SPENT IN MAJOR ACTIVITIES ACCORDING TO FATHER'S EDUCATIONAL ATTAINMENT

Activities	High School and Less (N=145)		Some College (N=74)		B.A. and Higher (N=97)		Effects(a)	
	WD	WE	WD	WE	WD	WE	WD	WE
Market work	0:16	0:23	0:15	0:11	0:10	0:23		
Household work:								
Female-typed	0:16	0:34	0:13	0:25	0:17	0:18		+
Male-typed	0:04	0:11	0:02	0:15	0:06	0:10		
Not sex-typed	0:04	0:11	0:02	0:11	0:04	0:07		A*
Personal care	0:46	0:53	0:44	0:43	1:00	0:47	***	
Eating	1:08	1:16	1:20	1:06	1:17	1:18	*	
Sleeping	9:15	9:55	9:37	10:14	8:56	10:05	A*	
School	4:50	-	4:00	-	4:37	-	A***	
Studying	0:24	0:12	0:13	0:06	0:25	0:22		A+
Church	0:07	0:36	0:08	0:49	0:03	1:09		**
Sports	0:22	0:29	0:32	0:39	0:31	0:24		S*
Outdoor activities	0:12	0:24	0:07	0:26	0:08	0:26	S+	A+
Hobbies	0:03	0:03	0:03	0:06	0:06	0:03		
Art activities	0:06	0:05	0:02	0:03	0:09	0:12		
Playing & games	1:18	1:58	1:49	2:25	1:20	1:34		A*
TV viewing	2:19	2:46	2:19	2:45	1:28	2:15	***	*
Reading	0:05	0:05	0:07	0:08	0:15	0:26	***	
Being read to	0:01	0:00	0:00	0:01	0:02	0:03	A*	A**
Household conversation	0:16	0:16	0:12	0:17	0:19	0:22	A*	
NA	0:03	0:15	0:14	0:13	0:32	0:19	**	

(a) Regressions were run controlling for the sex and age of the child.

*,**,*** Main effect for father's education, $p < .05$, $p < .01$, $p < .001$, respectively; +, $p < .10$.
A* Interaction between age and fathers' education, $p < .05$; A**, $p < .01$; A***, $p < .001$.
S* Interaction between sex and fathers' education, $p < .05$; S**, $p < .01$; S***, $p < .001$.

Table 14.9

AVERAGE HOURS:MINUTES SPENT IN MAJOR ACTIVITIES ACCORDING TO MOTHER'S EDUCATIONAL ATTAINMENT

	High School and Less (N=217)		Some College (N=96)		B.A. and Higher (N=69)		Effects(a)	
Activities	WD	WE	WD	WE	WD	WE	WD	WE
Market work	0:19	0:20	0:04	0:25	0:07	0:10		
Household work:								
Female-typed	0:15	0:30	0:18	0:34	0:09	0:15		+
Male-typed	0:04	0:13	0:01	0:09	0:04	0:03		
Not sex-typed	0:04	0:11	0:05	0:08	0:05	0:06		A*
Personal care	0:46	0:49	0:47	0:54	1:03	0:48	***	
Eating	1:13	1:16	1:12	1:11	1:20	1:16		
Sleeping	9:09	10:04	9:00	10:04	9:09	10:03	A+,S**	
School	4:32	_	5:02	_	4:55	_		
Studying	0:21	0:12	0:30	0:09	0:18	0:26		A*
Church	0:05	0:38	0:07	0:58	0:03	1:12		**
Sports	0:24	0:29	0:22	0:30	0:41	0:39	A*	S*,A+
Outdoor activities	0:11	0:24	0:07	0:30	0:04	0:23	+	
Hobbies	0:01	0:03	0:06	0:06	0:04	0:02	*	
Art activities	0:06	0:05	0:04	0:08	0:08	0:07		
Playing & games	1:22	1:58	1:23	2:00	1:28	1:29		A**
TV viewing	2:17	2:44	1:55	2:34	1:30	2:24	**	
Reading	0:06	0:08	0:10	0:16	0:14	0:22	**	**
Being read to	0:01	0:00	0:00	0:02	0:02	0:03		A***
Household conversation	0:16	0:17	0:16	0:19	0:16	0:13		
NA	0:14	0:15	0:33	0:15	0:18	0:27	S*,A+	S+,A*

(a) Regressions were run controlling for the sex and age of the child.

*,**,*** Main effect for mother's education, $p < .05$, $p < .01$, $p < .001$, respectively; +, $p < .10$.
A* Interaction between age and mother's education, $p < .05$; A**, $p < .01$; A***, $p < .001$.
S* Interaction between sex and mother's education, $p < .05$; S**, $p < .01$; S***, $p < .001$.

relationship. For example, the more highly educated fathers are no more likely than the less-educated fathers to have employed wives. It is possible that our hypotheses about social class differences in parenting values may apply here. The more highly educated parents may think it is important for their children to decide when to go to bed, while the less-educated parents feel they should exercise control over their children in this area. Consequently, children with higher educated parents may stay up later in the evening.

Activities that are significantly related to mothers' educational attainment but not fathers' are playing and sports. The relationship between children's sports involvement and mothers' education varies, on weekdays according to age of the child and on weekends by sex of the child. Among children of mothers with high school or some college education there is little difference in time spent in sports. But the children of college-educated mothers (particularly boys) spend more time at sports than other children.

These relationships do not really fit any established theory about class differences, nor do they fit any of our own hypotheses. It is possible that these effects result from the strength of one or two outliers. Indeed, when the distribution of the time spent by children of college-educated mothers in sports on weekdays and weekend days is inspected, we find one outlier for weekend sports, and three for weekday sports. When these are eliminated, the interaction between the age and sex of the child, the mother's educational attainment, and time spent in sports disappears.

To sum up, parents' educational attainment does appear to have an effect on certain domains of children's time allocation, most consistently (and most interestingly, from a developmental point of view) in the realm of intellectual pursuits. We believe that parents' child-rearing values and their goals for their children mediate the relationship between indicators of social class and time use.

Presence of Babies in the Household and Children's Use of Time

The presence of a baby in a household is closely tied to the family's life stage. To illustrate, 60 percent of families with no babies have children between the ages of 11 and 17 years, whereas 25 percent of families with a baby in the household also have 11- to 17-year-old children. Conversely, 37 percent of families with a baby in the household also have 4- to 6-year-olds, as opposed to 13 percent of families without babies. Given the normative stages of family life, the presence of a baby may have a very different effect on teenagers, for whom the presence of a baby may be nonnormative, than for young children. For this reason, and because we have already observed so

many age differences in time use, we will look within age groups of children when investigating the impact of the presence of a baby on their time use. We will also stratify those families with babies by the mother's employment status. If a mother works outside the home, we might expect a greater burden of household work to fall on other children.

The results of the analyses of children's time use according to the presence of babies in the household and mothers' employment status yielded unexpected results. Differences among the groups appeared only among 4- to 6-year-olds. Children 11 to 17 years old in families with a baby did not appear to take on any more responsibility for household production than other adolescents. There were three differentiating areas of time use for 4- to 6-year-old children in families with and an without a baby and an employed mother. First, 4- to 6-year-olds with younger siblings spend less time in school than 4- to 6-year-olds with no siblings three or more years younger, all other things being equal. Differences by maternal employment status did not reach statistical significance. Second, 4- to 6-year-olds with younger siblings "play" more than 4- to 6-year-olds with no younger children in the household. This effect may reflect differences in the time these children spend in school. But perhaps 4- to 6-year-olds who have only older siblings "grow up" faster. Perhaps they model older brothers' and sisters' activities more and perceive themselves as doing more grown-up things.

We do not know very much about the influence of siblings on behavior or self-perceptions. However, some research on birth-order effects on cognitive abilities suggest that the presence of babies in a household dilutes the family intellectual environment (Zajonc, 1976; Markus & Zajonc, 1977); perhaps one behavioral outgrowth of a diluted intellectual environment for 4- to 6-year-olds is more time spent playing. Finally, there is an interaction between presence of babies, mothers' employment status, and the time children spend listening to someone else reading. Children 4 to 6 years old with younger siblings and employed mothers are read to more often than other 4- to 6-year-olds. Although this finding is not entirely reliable because not that many children are read to at all, the data are provocative. If true, this finding suggests that reading to their children is one way in which employed parents compensate for being away from home so much of the time and for any feelings that they may not be contributing enough to their children's cognitive growth and development.

Summary

This report has summarized the time use of parents and children as it varies by certain demographic variables such as the mother's marital

status and employment status, and both parents' educational attainment. We also described differences in children's time use by their age and sex.

Based on other studies we expected to find few effects of the mother's employment status on family members, and indeed we found little evidence of substantial impact on the time use of husbands and children. Of course, a mother's participation in the labor force greatly changes her own time use.

Parents' education, used as an indicator of socioeconomic status, bore little relationship to variations in parents' time use, with the exception of television viewing. Increased education related to reduced television viewing. Parents' education related to children's time use in several important ways. Higher educational attainment in parents related to more studying and reading and less television watching by children. An interaction involving the sex of the child, parents' education, and the child's involvement in sports suggested greater sex-role stereotyping in that domain in families in which the parents have at least some college education than in families with high-school-educated parents.

The results of our analyses for the number of babies in the household served mainly to validate the time diary method. Mothers with at least one baby work less outside the home, spending more time on child care and housework. Fathers spend slightly more time on child care when there are small children (or one small child) in the home.

Children show substantial differences in time allocation according to age and show relatively fewer differences according to their sex. Some interactions between age and sex in time allocation showed a tendency for boys' and girls' time use to diverge with the onset of adolescence and conform more to sex-role stereotypes.

Methodological issues in collecting time diary information were discussed. Available data suggest that children give as much detailed information as adults, they enjoy talking about themselves to interviewers, and time estimates seem to match frequencies documented in previous research. Alternative methods were suggested for increasing reports of certain types of low frequency data.

Notes

[1]These aspects of the data base were made possible by a grant from the Child Development Foundation.

[2]In 90 percent of interviews with children aged 6 to 8, the mother was present. In 8 percent of interviews, the mothers gave no information, in 30 percent she gave "some," and in 46 percent she gave most or all of the information.

[3]See Chapter 4 for a detailed analysis of these measures for the adult population.

[4]See the discussion in Chapter 5 about the reliability of diary estimates for different types of activities.

[5]This variable is not the total time spent in conversation with household members, only the mention of this activity as primary. Children spend considerably more time in household conversations when secondary activities are taken into account.

Preliminary analyses show that children spend about an hour and a half talking to household members in conjunction with some other primary activity.

[6]The analyses reported above include only primary activities, and the reliability of the sex differences may be slightly suspect. But analyses in a later section, devoted entirely to children's television watching, include both primary and secondary activities in analyses of age and sex differences in TV watching and show similar results.

[7]It is interesting to compare the amount of time junior- and senior-high-school students in our sample report studying with the amount of time that same-aged Japanese students spend studying. American students in our sample study about one half-hour a day, where Japanese students study between two and three-and-a-half hours studying outside of school on a weekday (Nakanishi, 1982b). The ratio of Japanese to American time spent studying is of the magnitude 10:1. These kinds of proportions make it easier to understand why American students' standardized achievement scores compare so poorly with the scores of comparably aged students in other societies.

[8]These analyses were performed using a synthetic variable that combined mentions of TV watching as primary and secondary activities.

[9]The fact that 11- and 12-year-old children spend so much time watching television may reflect the fact that much television programming is especially appealing to boys in this preadolescent period (i.e., police dramas and shows with male heroes or superheroes).

[10]Given the large differences observed between the time Japanese and American students spend studying, it is doubly interesting to compare the time each group spends watching television. There is *very* little difference between the two groups. American and Japanese children between 10 and 15 years old both spend close to 2.5 hours on weekdays. On weekends Americans in our sample spend about 3 hours a day watching television and Japanese spend about 3.5 hours (Nakanishi, 1982a).

[11]Other research suggests that, through second grade, children have limited and fragmented comprehension of television content (Collins, 1979), therefore the analysis reported here was limited to older children.

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Issues in Modeling Behavior with Time Use Data

Frank P. Stafford

The use of time diaries can provide data on a comprehensive set of activities for individuals and thus offers, for the first time, an opportunity for analysis of individual and household behavior. Part I of this volume explains why we believe we have established the methodological superiority of time diaries over direct question sequences on various prespecified time uses. Part II describes a number of ways in which time use data can be used for descriptive analyses with a social accounting flavor, as well as for analyses of societal structure and change.

Here in Part III we provide a number of more analytic essays illustrating the topics that can be addressed with time use data. Our belief is that a wide range of such topics can be addressed with these data, which are largely cross-sectional, and that a still wider range of topics could be addressed with panel data. The discussion emphasizes currently formulated hypotheses, but we anticipate that the time use data base will be able to provide behavioral insights that lie outside the realm of currently existing models. These empirical phenomena can be expected to motivate theoretical research efforts to interpret and reconcile these findings. This "discovery" approach lies behind some of the chapters here.[1] Before discussing these models, it would be well to examine some methodological issues that are involved in estimating models where significant time use data clearly fall into that category.