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What is child care? Lessons from time-use surveys of major English-speaking countries

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Abstract This paper examines the definition and measurement of time devoted to child care in the diary-based surveys administered by the United States, Canada, Australia, and Great Britain. Detailed analysis of the relationship between measures of care activity and supervisory care in the American Time Use Survey (ATUS) illustrate the larger conceptual issues at stake.

Keywords Definition and measurement of child care · American Time Use Survey · Primary child care activity versus in-your-care · Comparability of time-use surveys

1 Introduction

How much time do parents devote to the care of their children, and how is the quantity of parental time affected by factors such as family income, education, and paid employment? The advent of new large-scale time-diary surveys administered to representative samples of national populations makes it possible to answer such questions with some precision. But quantitative precision can conceal conceptual ambiguity. In this paper, we explore several inconsistencies in the temporal categorization of child care and explain their relevance to the measurement of differences and trends in parental child care time.

We begin with a general overview of the conceptual issues at stake, illustrated by a comparison of coding categories used in the recent time-diary surveys of four major English-speaking countries: Canada (1998), Australia (1997), the United Kingdom (2000), and the United States (2003). Lack of consensus over the appropriate boundary between child care as a primary activity (‘‘what were you

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doing?'') or a secondary activity (''were you doing anything else at the same time'') has spilled over into inconsistencies in the measurement of child care as a primary activity. Inconsistencies are even greater in broader measures, whether these are based on reports of a secondary activity or stylized questions regarding time ''looking after children'' or time in which children were ''in your care.'' Our comparison of the Canadian and US surveys, which both used stylized questions designed to capture supervisory responsibilities, shows that small differences in wording led to significant differences in the reported results.

The second section of the paper examines characteristics of primary child care activity and supervisory child care in the American Time Use Survey 2003. Focusing on married or cohabiting adults living in households with at least one child under the age of six but no child over age 12, we explore the distribution of these types of care, their overlaps, and their density (defined as the ratio of children to adults present during a reported care activity or responsibility). We show that weekly and seasonal variations in primary care activities differ from those in supervisory care. The relationships between maternal work hours and these two types of child care time also differ. These results suggest that analysis of primary child care activities alone provides an incomplete picture of the temporal demands that children impose.

2 Defining child care

2.1 The definitional dilemma

Most time-use surveys categorize child care in terms of ''activities.'' Unfortunately, humans are ''multitasking beings,'' whose activities often elude clear categorization (Harvey & Royal, 2000: 8). Most surveys define ''primary activities'' in response to a question such as ''What were you doing during this time period?'' The recent Australian and United Kingdom surveys designated ''secondary'' activities in response to questions such as ''Were you doing anything else at the time?'' The list of activities listed as ''secondary'' often includes leisure activities such as ''listening to the radio'' or ''talking with friends.'' But as other time-use researchers have pointed out, child care frequently shows up as a secondary activity (Ironmonger, 2004). Such child care is conventionally termed ''secondary child care.''

Primary child care activities should not be conflated with ''time devoted to children'' or ''time that parents spend with children,'' although researchers aware of these distinctions sometimes use these terms synonymously (Gauthier, Furstenberg Jr., & Smeeding, 2004). Even measures of secondary childcare fail to capture passive or supervisory care that does not take the form of an activity. Adults are often constrained by the need to supervise or assume responsibility for young children, whether or not they are engaged in an explicit activity with them (Budig & Folbre, 2004; Folbre, Yoon, Finnoff, & Fuligni, 2005).

Neither the Canadian nor US national surveys question respondents concerning secondary activities. Both surveys, however, acknowledge the diffuse nature of child care by including a special child care module designed to ascertain if

Table 1 Child care measures in time use surveys of four major English-speaking countries

	US (2003)	Canada (1998)	Australia (1997)	UK (2000)
Primary child care	''Looking after children'' included	No code for passive or supervisory care	''Minding children'' included	No separate code for passive or supervisory care
	Transactions with others on behalf of children included	No transactions with others on behalf of children included	Transactions with others on behalf of children included	No transactions with others on behalf of children included
Secondary child care or supervisory responsibility	Special question regarding ''in your care''	Special question regarding ''looking after children''	Child care could be listed as a secondary activity	Child care could be listed as a secondary activity
With whom 'were with' 'who else was there'	Yes, ''being in the same room'' (for activities at home)	Yes, location not specified	Yes, location not specified	Yes, location not specified
For whom	No	No	Yes	No

individuals were ''looking after children'' (the Canadian wording) or if ''children were in their care'' (the US wording) (See Table 1). Answers to these questions are typically reported as ''secondary'' child care activity (Fedick, Pacholok, & Gauthier, 2005; ATUS published Tables). Yet in the US case, the wording was explicitly designed to capture supervisory responsibility that did not necessarily take the form of an ''activity'' (Horrigan & Herz, 2004).

All four surveys considered here asked questions regarding whom respondents were with, or ''who else was there'' while they were engaged in activity. The American Time Use Survey (ATUS) specifically asked if there was another person ''in the same room'' if the activity was being conducted at home or ''accompanying them'' if not at home; multiple individuals could be listed. International comparisons are troubled by some inconsistencies in spatial specification—unless restricted to ''in the same room'' respondents may interpret the question more broadly, such as ''in the same house'' or ''within shouting distance'' (Harvey & Royal, 2000). Still, the ''with whom'' question provides another vantage point for assessing care responsibilities, one that has often been described as similar to the ''in your care'' designation because it, too, reaches beyond ''activity.''[1]

But it is important to emphasize that the mere presence of a child is conceptually distinct from having a child ''in your care.'' A child can be ''in the care'' of an adult even if napping in another room or playing in the backyard. Indeed, such spatial separation is a typical feature of passive or supervisory care. On the other hand, the ''with whom'' variable could overstate child care responsibilities by extending their definition to include social activities in which many adults are

[1] For instance, the BLS noted that it would consider the possibility of replacing the ''in your care'' question with the ''with whom'' question (Schwartz, 2001). They also used information about whether a child was present in the same room in the 2003 survey to impute a value for ''in your care'' if that field was left blank (Jay Stewart, personal communication, October 19, 2005). Fedick et al. (2005) emphasize the similarity between these two measures in the Canadian data.

present, sharing responsibility for a small child. Many activities reported as leisure fall into this category (Mattingly & Bianchi, 2003; Bittman & Wajcman, 2004).

Few time-use surveys ask ''for whom'' an activity is conducted, although this contextual variable could add important information (Harvey & Royal, 2000). Children increase the burden of domestic labor in their households: their food must be prepared, their clothes must be washed, their shoes must be purchased, and their toys must be picked up. Yet many domestic activities benefit all household members at once: food is prepared for the entire family; laundry is mixed, et cetera. Multivariate analysis of the impact of number and age of children on the level and distribution of domestic work probably offers a better way of quantifying this effect (Craig, 2005).

A closer look at coding categories used by most recent time-use surveys of the major English-speaking countries illustrates some of the specific difficulties of defining and measuring child care.

2.2 Child care as primary activity

Measures of child care as a primary activity are more consistent across surveys than other measures. Even here, however, important discrepancies emerge.[2] Both the US and Australian surveys—unlike those conducted in Canada and the United Kingdom—include a coding category that confounds the otherwise rather tidy distinction between primary and non-primary child care time by including supervision of children—so called ''passive care''—as a separate subcategory of the primary care activity. The ATUS uses the phrase ''looking after children'' while the Australian time-use survey uses the phrase ''minding children.''

Appendix A lists the actual activity codes used for primary child care in the four major English-speaking countries. There is no exact equivalent to ATUS code 03-01-09 or to Australian code 54 in the other two surveys, although the UK survey adds ''supervision of a child'' onto a residual category, (3819-Other specified physical care and supervision of a child). The US and Australian primary child care activity codes represent a more concerted effort to capture more passive forms of care. According to the published ATUS Tables, about 5% of women's and about 7% of men's total child care time in households with the youngest child under 6 was devoted to the very general activity of ''looking after children.''[3]

The Australian and US surveys also made stronger efforts to measure the time devoted to communication with others *on behalf of* children, which might be termed the ''transactions'' dimension of primary child care. As designers of the US survey explain,

> The Bureau of Labor Statistics (BLS) coding team conceptually defined primary childcare as any activity done with a child that is interactive in

[2] Efforts to harmonize time-use data from different national surveys have typically been limited to adjustments for disparate age categories and other demographic inconsistencies, without close attention to definitions or coding protocols. Other important issues beyond the scope of this paper include differences in sampling frames and survey protocols.

[3] See Table 7, average hours per day spent by persons 18 years and over caring for household children under 18 years. http://www.bls.gov/news.release/archives/atus_09142004.pdf

> nature—such as reading, playing, and talking—and correctly coding such activities posed few difficulties. However, other activities were considered primary childcare as well, but were not limited to this restrictive definition requiring interaction with a child. For example, an activity could be coded as child care if a child was not present but the activity (such as ''talking to my child's teacher'') was *clearly done in the child's interest or on the child's behalf*'' (Shelley, 2005:5).[4]

In other words, the ATUS implicitly resorted to a ''for whom'' rather than an ''activity with'' definition of child care where activities related to health care and educational needs were concerned. Similarly, Australian codes 55 and 57 called attention to communication with others on behalf of children. Neither the Canadian nor UK time-use surveys make explicit mention of such activities. (All the surveys include a separate travel category for travel related to child care).

Australian and US efforts to capture the time devoted to managing the provision of health care and education services are admirable, since management represents an important component of parental responsibilities. But the inclusion of some activities conducted on behalf of children—whether or not they are physically present—is inconsistent with the exclusion of additional housework resulting from children. It might even introduce a class bias: High-education and high-income households may be more likely to spend time negotiating with doctors, teachers, coaches, and nannies (counted as primary care activities) on behalf of their children or driving them to soccer games and piano lessons. Low-education and low-income households may be more likely to spend time cooking, cleaning, and doing laundry for their children (not counted as primary care activities).

Inconsistencies in coding of primary activities should not discourage international comparisons but redirect them toward more specific comparisons. Researchers could devote more attention to specific categories such as ''developmental'' care (e.g. reading to children or helping them with homework), ''physical'' care (e.g. feeding and bathing), ''low-intensity'' or supervisory care, and ''managerial'' care. Multivariate analysis can be used to explore the impact of household characteristics on specific activities rather than primary child care activity in general (Bittman & Wajcman, 2004; Craig, 2005; Zuzanek, 2001).

2.3 Secondary child care activity and supervisory responsibility

More careful analysis of both secondary activities and measures of care responsibility could help build a stronger consensus on how child care should be defined. Unlike many other non-market work activities such as ''cooking dinner'' or ''doing laundry,'' child care often involves complex multi-tasking. Both Australian and British surveys collected information on secondary activities, including child care. Unfortunately, differences in specification of activity codes described above may have affected the results. Further, the Australian survey primed respondents by including instructions on the written form they were asked to fill out that called

[4] The ATUS also used certain criteria that seemed to give precedence to activities in which a child was present, but no additional adult was present. See US BLS (2004:8).

attention to specific activities. Under the second column of the diary form, headed by the question ''What else were you doing at the same time?'' three specific examples were listed: ''e.g. childminding, watching television, listening to the radio'' (Ironmonger, 2004: 95).

This priming of respondents almost certainly helps explain why secondary child care time represented more than 20% of all secondary activity time reported in Australia in 1997, but only slightly more than 10% of all secondary activity time reported in the United Kingdom in 2000 (Ironmonger, 2004: 98–99; UK, 2003: 32).[5] The impact of activity codes and survey instructions on measurement of child care as a secondary activity could also help explain why national surveys that list only a few child care activities, like the most recent Korean survey, do not yield very high estimates of secondary child care (Yoon, Unpublished).

As aforementioned, neither the Canadian nor US time surveys attempted to measure secondary activities, but relied instead on a special question aimed to capture care responsibility (in addition to collecting information about who else was present). The US survey design was influenced by the 1992 Canadian precedent (Frederick, 1993) as well as by cognitive studies of the impact of alternative wording on measures of time devoted to non-primary care (Schwartz, 2001).

A recent analysis of the 1998 Canadian survey provides a fascinating window into the relationship between three different measures of child care time: time that child care activities were reported as the primary activity, time that adults were ''looking after'' children, and time in which a child was listed as present while an adult was engaged in an activity (Fedick et al., 2005:17).[6] Results were tabulated for employed males, non-employed males, employed females, and non-employed females who were married or cohabiting, with at least one child under the age of five in the household (See Table 2).

For all groups except employed males, the time spent ''looking after children'' in the special module was highest, total time spent in presence of children next, and time spent in child care as a primary activity was lowest. Fedick et al. emphasize that two broader measures, total time spent in presence of children and total time spent ''looking after children'' are relatively similar. Still, the difference between them amounts to more than an hour a day for employed women, or more than 7 h per week (a difference of about 18%). While the two measures are clearly related, Physical proximity and ''looking after'' children are related but distinctly different measures of child care.

2.4 Comparisons between Canadian and US measures of child care

In order to illustrate the impact of different survey definitions of child care we compare the estimates of child care time provided by Fedick et al. for the 1998 Canadian Social Survey with parallel results from the 2003 ATUS. We impose

[5] In Australia, the percentage of all secondary activity reported by women that was childcare was about 30%; for men, about 17%. A simple average of these two measures yields an overall estimate higher than 20%.

[6] The survey also included answers to a single stylized question, ''about how much time did you spend in child care?'' We do not discuss these results because there is nothing comparable to it in the ATUS.

Table 2 Estimates of mean time devoted to child care by married or cohabiting canadians with at least one child under the age of five in the household in 1998, by Fedick et al.[a,b,c] (hours per day)

Parental time estimate	Employed males	Non-employed males	Employed females	Non-employed females
A. Child care reported as a primary activity	1.5 (1.7) $n = 460$	1.6 (1.9) $n = 118$	2.2 (1.9) $n = 202$	3.6 (2.4) $n = 316$
B. Total time spent with children present	4.5 (3.9) $n = 460$	5.7 (4.4) $n = 118$	6.2 (4.2) $n = 202$	9.4 (3.6) $n = 316$
C. Time spent ''looking after'' children (from the special child care module)	5.2 (4.3) $n = 251$	4.0 (4.5) $n = 70$	7.3 (4.3) $n = 122$	9.6 (5.4) $n = 206$
D. Measure of supervisory responsibility time comparable to US measure (row C/row A)	3.7	2.4	5.1	6
E. Ratio of ''looking after'' time to primary care activity (row D/row A)	2.5	1.5	2.3	1.7
F. Primary as a percentage of total care (row A/row C)	28.8%	40.0%	30.0%	37.5%

Source: Authors' computation based on results reported by Fedick et al. from Statistics Canada General Social Survey, 1998

Notes:

[a] Results are based on weighted data

[b] Standard deviations are in brackets

[c] The number of cases (n) differ between estimates of child care since they are based on different sections of the survey. See Methods and materials section for a detailed explanation of the sample group on which each estimate was based

similar restrictions on the universe, which consists only of married or cohabiting adults in households with at least one child under five. In both cases, observations for weekdays, Saturdays, and Sundays are weighted to derive estimates for an average day.

While the 2003 ATUS took an approach similar to the Canadian survey of 1998, it used the term ''in your care'' rather than ''looking after'' children, a difference that the cognitive studies conducted by the U.S. Bureau of Labor Statistics showed would likely be significant (Schwartz, 2001). The ATUS restricted the time that children could be in an adult's care to time between when the first child woke up and the last child went to bed.[7] Excluded from this category was all time that an adult was engaged in child care as a primary activity. The comparable measure for

[7] As far as we can tell from the Canadian time-use survey questionnaire on line, this restriction was also imposed on the Canadian measure.

Table 3 Estimates of mean time devoted to child care by married or cohabiting US residents with at least one child under the age of five in the household in 2003 (hours per day, n = 3,080)

Parental time estimate	Employed males	Non-employed males	Employed females	Non-employed females
A. Child care reported as a primary activity	1.4 (1.8) n = 1317	1.6 (2.4) n = 112	2.6 (2.1)** n = 976	3.2 (2.7)* n = 675
B. Total time spent with children in same room	5.7 (4.2)** n = 1317	7.3 (4.4)** n = 112	7.8 (4.1)** n = 976	10.0 (3.5)* n = 675
C. Time spent with children ''in your care'' from special child care module	5.5 (5.0) n = 1317	7.6 (5.3)** n = 112	7.6 (4.9) n = 976	9.5 (4.2) n = 675
D. Ratio of ''in your care'' time to primary child care activity (row C/row A)	3.9	4.8	2.9	3.0
E. Primary as a percentage of total care	20.3%	17.4%	25.5%	25.2%

Source: Authors' computation of data from ATUS 2003

Note: Results are based on weighted data; standard deviations in parentheses

* Differences in means between Canadian numbers in Table 2 and US numbers are statistically significant at 5%. **Differences in means between Canadian numbers in Table 2 and US numbers are statistically significant at 1%

the Canadian survey is all time spent with children minus time devoted to primary care with children (see Row D of Table 2).

Sample sizes were larger for the US survey, and the alternative measures apply to exactly the same group of people, which was not the case for the Canadian survey. As a result of these minor differences, as well as the more recent date of the US survey, the two surveys are not perfectly comparable. But cross-national differences in the amount of time devoted to primary child care activities are relatively small (less than 15% for every demographic category), and display a relatively consistent pattern (the US estimates are lower for three out of the four categories). Similarly, comparisons of ''time with'' children are similar across the two countries. For the US the averages are consistently higher than for Canada, but never by more than 15%.

By contrast, differences in the stylized measures of child care time that are not activity-based loom large. Employed women in the US reported spending 30% more time with ''children in their care'' than their Canadian counterparts reported ''looking after children.'' Non-employed women reported 53% more.[8] Employed and non-employed men also reported more time fulfilling supervisory responsibilities in the US than in Canada.

The contrast is heightened by comparison of time devoted to primary child care activities as a percentage of total time devoted to children (See Row F of Table 2 and Row E of Table 3). The cross-country differences are particularly striking for non-employed men and women. In Canada, the primary child care activity time these two groups reported amounted to about 40 and 38% of the total, respectively.

[8] The high standard deviations of the reported Canadian results render all these differences statistically insignificant.

In the US, they amounted to only about 18 and 28% of the total, respectively. Both country surveys measured supervisory responsibilities using similar methods, but the differences in wording yielded very different results.

In sum, international measures of the larger temporal demands of child care (beyond primary activities of care) are even less comparable than measures of aggregated primary child care activities. Differences in survey design probably affected the measures of secondary child care activity collected by Australia and Great Britain, and differences in wording had an even larger effect on measures of supervisory responsibility collected by Canada and the United States. A closer look at the relationship between time devoted to primary child care activities and time devoted to supervisory responsibilities in the ATUS provides some insights relevant to future survey design.

3 Activities versus responsibilities in the ATUS

Most empirical studies of child care time focus on the aggregate amount of time in primary care activities, examining differences based on factors such as gender, education, and hours of employment. The detailed structure and relatively large sample size of the ATUS offer a powerful lens for magnifying this analysis and examining disaggregated primary activities, the temporal structure of supervisory responsibility, and the social characteristics of care time.

In order to explore the relationship among different measures of child care we select a subset of the entire ATUS universe, married or cohabiting individuals living in households with a child under the age of 13, with at least one child under the age of 6. We eliminate all individuals living in households with a child between the ages of 13 and 17, because the ''in your care'' question was asked only regarding children ages 12 or under. Comparisons of care activity and ''in your care'' would be confounded by the presence of older children.

3.1 Distributions of different types of care

Few people engage in all of the activities coded in a time-diary survey on the actual survey day. As a result, reports of time devoted to many activities, including child care activities, are characterized by a high number of zeros. Frequency distributions show observations are heavily skewed to the left with large numbers reporting small quantities of time reported, as well as zeros. A small number of high values typically create a long tail. Of all the time devoted to different types of activity, the only one that resembles a normal distribution is time devoted to sleep. Among activities that average less than an hour a day, the standard deviation is typically higher than the mean. Even among married or cohabiting individuals living in a household with a child under the age of six but no child age 13 or over, more than 40% of men and 27% of women report zero time devoted to child care on the survey day (See Appendix B).

The distribution of supervisory responsibility time among these individuals takes a very different shape, for both men and women. While the proportion of zeros reported is much smaller, the distribution appears almost rectangular for men, but

somewhat more bell-shaped for women (See Appendix B). These distinctly non-normal distributions have important implications for statistical inference.

3.2 Overlaps among different types of care

Temporal overlaps among different measures of child care offer some important insights into their similarities and differences. In order to summarize the overlaps of time in which adults reported a child care activity, a child ''in their care'' or a child physically present, we group primary child care activities into four categories: physical care, developmental care, managerial/logistical care, and low-intensity care (See Table 4). Physical care represents the least discretionary activities that are necessary to meet children's basic needs—feeding, bathing, dressing, and attending to medical needs.

Educational/developmental care represents activities that directly contribute to children's physical, emotional, and cognitive development. Managerial/logistical care represents activities performed on behalf of children, such as making arrangements on their behalf or transporting them to school or sports activities. Low-intensity care represents activities that require relatively little engagement with the child. As noted above, the latter two categories lie between the active engagement usually associated with primary care activities and the more passive constraints of supervisory care.

Among all married or cohabiting adults living in households with a child under the age of 6 but no child over the age of 12, the average amount of time devoted to primary child care activities was about 2.2 h per day. Physical care accounted for almost half this time (.96 h or about 44%). Educational/developmental care accounted for .75 h, or about 35% of the total). Logistical/managerial care accounted for about .31 h, or about 15% of the total. The average ratio of children to adults present during periods of active care was about 1.5.[9]

Most of the time that adults reported a child care activity they also reported that a child was ''in their care'' (92.6% of time) and it was even more likely that a child would be present (94.8% of time). Within some sub-categories, however, there is surprisingly little overlap. For instance, among activities of managerial/logistical care, the overlap with children ''in your care'' was only 78.5% and a child was present only 79.5% of the time. Specifically, in care-related travel for a household child, a child was present only about 75% of the time, probably because this travel includes time that an adult is returning alone from a trip to drop off a child at school or at another activity. This is the most important example of an activity coded as primary child care that does not always involve direct interaction with a child.

3.3 Characteristics of time with a child ''in your care''

Adults could report that a child was ''in their care'' during any activity except sleep. On average, married and cohabiting adults with at least one child under six and no

[9] The ratio of child to adults was calculated by dividing the number of children that were present during the activity by the number of adults that were present including oneself and weighing that with the duration of the activity time.

Table 4 Overlaps among primary child care activities, children ''in your care'' and ''child present'' for married and cohabiting persons in a household with youngest child under 6 but no child over 12, 2003 ATUS (n = 3080)

	Average time in primary care activity (hours per day)	Percentage of time in primary care activity in which child ''in your care'' also reported (%)	Percentage of time in primary care activity in which child ''present'' was also reported (%)
Physical care			
030101: Physical care for household children	.923	95.2	97.6
040101: Physical care for non-household children	.004	100.0	88.2
030301: Providing medical care to household children	.025	86.9	96.4
040301: Providing medical care to non-household children	.000		
030399: Activities related to household child's health, n.e.c	.003	90.6	90.6
040399: Activities related to non-household child's health, n.e.c	.001		100.0
Total physical care	.956	94.9	97.5
Educational/developmental care			
030102: Reading to/ with household children	.065	96.8	97.4
040102: Reading to/ with non-household children	.000		
030103: Playing with household children, not sports	.476	97.7	99.2
040103: Playing with non-household children, not sports	.003	73.9	86.3
030104: Arts and crafts with household children	.004	57.2	100.0
040104: Arts and crafts with non-household children	.000		
030105: Playing sports with household children	.013	99.6	100.0

Table 4 continued

	Average time in primary care activity (hours per day)	Percentage of time in primary care activity in which child ''in your care'' also reported (%)	Percentage of time in primary care activity in which child ''present'' was also reported (%)
040105: Playing sports with non-household children	.000		
030106: Talking with/listening to household children	.035	93.2	99.7
040106: Talking with/listening to non-household children	.001	96.0	100.0
030107: Helping/teaching household children (not related to education)	.013	91.2	100.0
040107: Helping/teaching non-household children (not related to education)	.000	100.0	100.0
030110: Attending household children's events	.044	92.1	80.6
040110: Attending non-household children's events	.000	100.0	100.0
030201: Homework (household children)	.071	97.0	98.9
040201: Homework (non-household children)	.000	19.2	100.0
030202: Meeting and school conferences (household children)	.010	30.4	39.3
040202: Meeting and school conferences (non-household children)	.000		
030203: Home schooling of household children	.018	95.2	100.0
040203: Home schooling of non-household children	.000	.0	.0
030299: Activities related to household child's education, n.e.c.	.001	93.0	93.0

Table 4 continued

	Average time in primary care activity (hours per day)	Percentage of time in primary care activity in which child ''in your care'' also reported (%)	Percentage of time in primary care activity in which child ''present'' was also reported (%)
040299: Activities related to non-household child'seducation, n.e.c.	.000		
Total educational/ developmental care	.752	95.7	97.2
Managerial/logistical care			
030108: Organizing and planning for household children	.015	84.6	62.1
040108: Organizing and planning for non-household children	.000	100.0	43.0
030111: Waiting for/ with household children	.012	83.2	85.6
040111: Waiting for/ with non-household children	.001	100.0	90.1
030112: Picking up/ dropping off household children	.063	89.9	91.9
040112: Picking up/ dropping off non-household children	.002	88.2	99.0
030204: Waiting associated with household children's education	.000	100.0	100.0
040204: Waiting associated with non-household children's education	.000		
030302: Obtaining medical care for household children	.014	97.2	95.5
040302: Obtaining medical care for non-household children	.000		
030303: Waiting associated with household children's health	.007	100.0	100.0

Table 4 continued

	Average time in primary care activity (hours per day)	Percentage of time in primary care activity in which child ''in your care'' also reported (%)	Percentage of time in primary care activity in which child ''present'' was also reported (%)
040303: Waiting associated with non-household children's health	.000		
170301: Care-related travel for household child	.191	72.2	74.4
170401: Care-related travel for non-household child	.010	66.7	77.6
Total managerial/ logistical care	.314	78.5	79.5
Low-intensity care			
030109: Looking after household children {as a primary activity)	.098	96.6	96.8
040109: Looking after non-household children {as a primary activity)	.008	100.0	100.0
030199: Caring for and helping household children, n.e.c.	.026	88.6	98.3
040199: Caring for and helping non-household children,n.e.c.	.004	.2	100.0
Total low-intensity care	.136	92.4	97.4
Total child care activities	2.158	92.6	94.8

child older than 12 reported that children were in their care about 26% of the entire sample day or about 6.3 h (not counting time that they were also engaged in a primary child care activity). This represents almost three times as much as the 2.2 h average amount of time devoted to primary care activities. The total average amount of time devoted to or constrained by children was about 8.5 h, more than twice the average amount of time devoted to paid work.

Supervisory responsibilities extended well beyond physical proximity. A child was listed as present only about 68% of the time that an adult reported a child ''in their care'' (See Tables 4, 5). A child that was not physically present could be playing in another room or in the backyard or perhaps taking a daytime nap. Some kinds of adult activities were more likely than others to be combined with ''in your care'' time. Adults were most likely to report children ''in their care'' while

Table 5 Overlaps among adult activities and child ''in your care'' and child present for married and cohabiting persons in a household with the youngest child under 6 but no child over 12, 2003 ATUS (n = 3080)

Activities	Average time in activity (hours per day)	Percentage of time in activity that child was reported ''in your care'' (%)	Percentage of time child reported ''in your care'' that a child was also reported present (%)
Personal care			
01: Personal care	8.969	3.4	3.5
Eating/drinking/socializing/leisure/sports			
11: Eating and drinking	1.049	65.6	92.3
12: Socializing relaxing and leisure	3.330	64.0	73.9
13: Sports exercise and recreation	.256	49.5	87.7
Total	4.635	63.5	78.8
Household work and care other than care			
02: Household activities	2.021	77.2	56.3
03: Caring for and helping household members	1.966	4.1	95.0
04: Caring for and helping nonhousehold members	.099	39.9	84.4
Total	4.086	41.1	58.8
Logistical/managerial			
07: Consumer purchases	.428	66.7	96.4
08: Professional and personal care services	.079	39.7	90.0
09: Household services	.010	40.6	60.2
16: Telephone calls	.057	67.8	49.8
17: Traveling	1.304	34.6	94.9
10:Government services and civic obligations	.005	18.4	48.6
Total	1.881	43.1	92.9
Religious/community			
14: Religious and spiritual activities	.140	68.1	93.2
15: Volunteer activities	.109	56.8	79.2

Table 5 continued

Activities	Average time in activity (hours per day)	Percentage of time in activity that child was reported ''in your care'' (%)	Percentage of time child reported ''in your care'' that a child was also reported present (%)
Total	.249	63.2	87.7
Work and work-related			
05: Working and work-related activities	3.944	6.5	4.3
Education			
06: Education	.110	26.6	37.0
Residual			
50: Data codes	.125	68.1	54.6
Total	24	26.1	68.2

engaged in eating/drinking/socializing/leisure activities and religious/community activities (over 60% of the time) (See Table 5). In both these categories, children were often listed as present (with an 80% average overlap). Household work and logistical/managerial activities were next in importance, overlapped with ''in your care'' more than 40% of the time. But children were less likely to be in the same room for household work activities (with a 59% overlap) than for logistical/managerial activities (with a 93% overlap).

In general, women were more likely to report taking supervisory responsibility for children than men were. Since only one person per household was surveyed, it is unclear to what extent adults may share supervisory responsibilities. Both a mother and a father could report simultaneous supervisory responsibilities. Taking advantage of information in the survey about ''who else was present,'' we calculated what percentage of the time that both a spouse and a child were present a male or female reported a child was ''in their care.'' Among the two activities above in which supervisory responsibilities were most likely to be reported, the incidence was high for both women and men, but slightly higher for women. For instance, women who were engaged in eating/drinking/socializing/leisure with both a spouse and a child present reported a child was in their care about 95% of the time, men about 83% of the time. Women seem more likely to assume responsibility for children, and the ratio of children to adults tends to be higher for their supervisory responsibility time. Still, supervisory responsibility may often be diffused across more than one adult.

3.4 Effects of age and number of children

Child care responsibilities are directly affected by the number and age of children in the household. These factors have different effects on care activities and on supervisory responsibility. Activities of child care decline more steeply than supervisory time as children age; neither form of time utilization increases much with number of children. Table 6 cross-tabulates age of youngest child and number

Table 6 Cross tabulation of child care activities and supervisory responsibilities for children by age of youngest child and number of children in household, normalized values (married and cohabiting persons in a household with the youngest child under 6 but no child over 12, 2003 ATUS (n = 3080))

Age of youngest child	Number of children				
	1	2	3	4	5 or more
0	**1.00**	**.11**	**.97**	**1.18**	**1.06**
	1.00	*.98*	*1.21*	*1.06*	*1.01*
1	**.70**	**.91**	**.89**	**.77**	**.82**
	.85	*.90*	*1.02*	*1.24*	*.93*
2	**.56**	**.73**	**.81**	**.64**	**.67**
	.86	*.99*	*1.06*	*.98*	*.95*
3	**.50**	**.67**	**.66**	**.87**	**.61**
	.85	*1.01*	*1.07*	*1.39*	*.97*
4	**.46**	**.48**	**.70**	**1.02**	**.52**
	.82	*.94*	*1.00*	*.52*	*.92*
5	**.42**	**.61**	**.84**	**.45**	**.61**
	.83	*.96*	*1.31*	*1.27*	*.94*

Child care activities in boldface; supervisory responsibility time in italics

of children for both active and supervisory care, normalizing both measures to 1 for households with only one child under the age of 1. This normalization highlights the percentage increase in time associated with changes in demographic composition. In households in which the youngest child is under the age of 1, for instance, the additional activity time associated with an additional child is 1.11 or 11%. The addition of a third child to a household in which the youngest is under the age of 1 is associated with a reduction in time on child care activity, probably due to child spacing and sibling care effects.[10] In general, the addition of a child to the household tends to have relatively small effects on both types of child care time except when the addition of the fourth child is associated with the peaks in supervisory time. The decline in child care activity as age of youngest child increases is far more noticeable. Supervisory time does not decline as steeply.

3.5 Tradeoffs between care activity and care responsibility

However large the differences between the absolute amounts of time devoted to care activities and time constrained by supervisory responsibilities, these would be less important if the two types of care time were linked. For instance, time devoted to care activities could serve as an indicator of the time devoted to supervisory responsibility. Interestingly, however, the two are not significantly correlated, perhaps because men tend to provide more supervisory than active care time. Disaggregation by gender reveals no significant correlation between the two types of time use for men, but for women there is a negative and significant Pearson

[10] A similar pattern has been observed in Australian data (Michael Bittman, personal communication).

correlation of −.17, and a Spearman's rho of −.18. For women, at least, active care time and supervisory time appear to be substitutes.

This observation is consistent with the pattern of variation in both types of time over days of the week. Both men and women provide more supervisory time for children on weekends than on weekdays, and women reduce the time they devote to active care on weekends (See Table 6). This may partly represent substitution among parents—men provide slightly more active care on weekends. However, the relative magnitudes suggest that the reduction in time children spend in school or in non-parental care on the weekend leads to a substitution away from care activities toward more relaxed supervisory care. A similar pattern is evident over months of the year—time devoted to primary care activities is lower in July than any other month; time that men, in particular, devote to supervisory care is highest in July. Gender differences are smallest in supervisory responsibility on weekends, with men's time reaching 79% of women's time (See Table 6). Gender differences are greatest with primary child care activities on weekdays: men's time amounts to only 39% of women's in this category.

3.6 Maternal work hours and child care time

Mothers in the United States tend to buffer the temporal effects of wage employment on their children. An additional hour of market work is associated with a relatively small reduction in primary child care activity time (Bianchi, 2000). Since there are only 24 h in a day, and allocation of time to different activities is simultaneously determined, no causal inferences can be drawn from such associations. We believe it is useful, however, to examine the relationships between hours of maternal employment and the different measures of child care discussed above.

Treating five categories of child care time on a diary day as dependent variables, we specify a Tobit model in which hours of maternal employment represent the primary independent variable of interest for the subsample of females living with a child under the age 5, but no child over 13. The control variables include dummies

Table 7 Variations in child care activities and supervisory responsibility for children by day of week (married and cohabiting persons in a household with the youngest child under 6 but no child over 12), hours per day, 2003 ATUS

	Weekday			Weekend		
	Male (n = 1158)	Female (n = 1344)	Male/ female	Male (n = 1276)	Female (n = 1460)	Male/ female
Primary child care activity	1.04 (0.05)	2.69** (0.08)	.39	1.13 (0.06)	1.81 (0.06)	.63
Child ''in-your-care''	3.41** (0.12)	6.63** (0.14)	.51	7.75 (0.18)	9.79 (0.14)	.79

Note: standards errors in brackets

** Differences in means of each definition of child care for subgroups of men and women between weekday and weekend statistically significant at $p < 0.01\%$

for full-time work, marital status, age, college education, number of children, age of youngest child, household income, spouse's usual hours of work, weekday versus Saturday or Sunday, and race/ethnicity. The estimates presented in Table 8 show that maternal hours of paid employment have a greater negative association with supervisory responsibility than with hours of active care.

The Tobit estimates presented in Table 8 show that maternal hours of paid employment are negatively related to all categories of child care time except managerial/logistical time. The negative association with ''in your care'' time is by far the largest, followed by that with low-intensity care. The negative association with developmental care is the smallest of the significant coefficients. These results are consistent with the hypothesis that mothers protect the most ''high quality'' time with their children, and are perhaps unable to reduce logistical/managerial time. Driving children to day care, for instance, may represent an important part of the shift in their time allocation associated with employment. College education has a particularly large and significant positive effect on developmental care, with no significant effects on other categories of care. As mothers age, development care and physical care increases up until 35 and 31 years old respectively then decreases. Dummies for Black and Hispanic show negative effects.

The Tobit results put the effects of number of children and age of youngest child in statistical perspective. While number of children has a positive and significant effect on two categories of primary care, the coefficient is largest on low-intensity care activities. The coefficient is even larger on ''in your care'' time. Time devoted to activities of physical care for children declines more sharply and significantly with age than any other category. As suggested by the descriptive analysis, weekend days have a positive and significant impact on ''in your care'' time but a negative and significant effect on overall care activity time. Even controlling for weekend effects, care activity and ''in your care'' appear to be substitutes rather than complements: when ''in your care'' time is added to the list of independent variables in column 1 of Table 8, it is negatively associated with time devoted to care activities.[11]

4 Conclusion

What is child care? Despite much progress in developing empirical measures, the surveys of the major English-speaking countries use rather different definitions for both primary child care activities and other measures. The distinction between primary and secondary child care is not as tidy as it initially seems, since some primary activities are relatively ''passive'' (such as looking after or minding children). Others, such as logistical/managerial activities (transporting children or dealing with doctors or teachers on behalf of children) may not involve much direct interaction with children.

The ATUS provides an opportunity to compare activities of care with the supervisory responsibilities captured by the ''in your care'' question. Analysis of

[11] The coefficient on 'in your care' was −.14.

Table 8 Tobit marginal effects estimates of the impact of maternal employment on measures of child care for married and cohabiting females in households with youngest child under 6 but no child over 12, 2003 ATUS (n = 1523)

	(1) All child care activities combined	(2) Developmental care activities	(3) Physical care activities	(4) Managerial care activities	(5) Low-intensity care activities	(6) Supervisory or ''in your care'' time
Hours of paid work, diary day [2.36]	−.207	−.114	−.128	.004	−.185	−.581
	(.023)**	(.021)**	(.017)**	(.015)	(.058)**	(.046)**
Full time jobs (non-employed and part-time omitted [0.34]	−.452	−.353	−.106	.003	−.697	−.395
	(.176)*	(.153)*	(.118)	(.115)	(.416)	(.316)
Cohabiting (married omitted) [0.08]	.012	.008	.042	−.035	.278	.202
	(.346)	(.394)	(.294)	(.281)	(.565)	(.479)
Age [32.55]	.278	.209	.124	.059	.181	.210
	(.079)**	(.064)**	(.053)*	(.054)	(.122)	(.133)
Age squared [1059.50]	−.004	−.003	−.002	−.001	−.002	−.004
	(.001)**	(.001)**	(.001)**	(.001)	(.002)	(.002)*
College and higher (less-than-high-school omitted) [0.36]	1.153	1.134	.491	.395	.793	.174
	(.364)**	(.341)**	(.257)	(.236)	(.652)	(.643)
High school completed (less-than-high-school omitted) [0.51]	.762	.949	.194	.464	.096	.482
	(.317)*	(.308)**	(.226)	(.218)*	(.560)	(.561)
Age of youngest child [2.06]	−.351	−.013	−.369	.129	.007	.025
	(.048)**	(.042)	(.034)**	(.028)**	(.085)	(.079)
Number of household children [2.15]	.259	.048	.080	.215	.347	.493
	(.081)**	(.070)	(.056)	(.061)**	(.153)*	(.133)**
Black (non-black omitted) [0.08]	−.080	−.813	−.197	−.207	1.368	−.795
	(.462)	(.362)*	(.193)	(.345)	(1.322)	(.621)
Hispanic (non-Hispanic omitted) [0.20]	−.702	−.574	−.389	−.279	.152	.205
	(.220)**	(.203)**	(.171)*	(.149)	(.417)	(.414)

Table 8 continued

	(1) All child care activities combined	(2) Developmental care activities	(3) Physical care activities	(4) Managerial care activities	(5) Low-intensity care activities	(6) Supervisory or ''in your care'' time
Household income [53520.9]	.000	.000	.000	−.000	−.000	.000
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
Spouse's usual hours of work/w [37.83]	.001	−.004	.002	.006	.004	.015
	(.004)	(.004)	(.003)	(.003)*	(.007)	(.007)*
Saturday (weekday omitted) [0.15]	−1.591	−.559	−.960	−1.019	−.204	1.178
	(.183)**	(.179)**	(.123)**	(.134)**	(.354)	(.352)**
Sunday (weekday omitted) [0.15]	−1.327	−.835	−.434	−1.169	.037	.750
	(.177)**	(.165)**	(.126)**	(.137)**	(.323)	(.286)**

Standard errors in parentheses

* Significant at 5%; ** significant at 1%

Means of variables in brackets

Dependent variables are measured in hours a day

This analysis excludes respondents who did not report household income, about 7.8% of the total. It utilizes sampling weights that account for survey design effects. Marginal effects were calculated at means for continuous variables and for discrete change for dummy variable from 0 to 1

overlaps between care activities, ''in your care'' and ''who else was present'' reveals intriguing differences in timing and intensity. Logistical /managerial tasks are often performed without children present. Adults engaging in eating, drinking, social and leisure activities, as well as religious and community activities, are particularly likely to report having children in their care. The age of youngest child and the number of children in a household affect time use in different ways. Overall, the distribution of time devoted to supervision of children is more equally balanced between men and women than the distribution of primary child care activity time, especially on weekends.

Tobit estimates reveal a strong negative relationship between hours of maternal employment and low-intensity care and supervisory care. The relationship between hours of maternal employment and logistical/managerial care and developmental care is weaker. Further detective work on these issues could shed further light on issues of comparability across surveys of the major English-speaking countries. It could also spur efforts to define child care in more careful and consistent terms, a necessary step in the development of more accurate estimates of costs to parents and outcomes for children.

Appendix A: Activity codes for child care

American Time Use Survey, 2003 (from American Time Use Survey Activity Lexicon 2003: 17)

03 Caring For and Helping Household Members

01 Caring For and Helping Household Children (Codes for Caring For and Helping Non-Household Children follow same format)

01 Physical care for household children
02 Reading to/with household children
03 Playing with household children, not sports
04 Arts and crafts with household children
05 Playing sports with household children
06 Talking with/listening to household children
07 Helping/teaching household children (not related to education)
08 Organization and planning for household children
09 Looking after household children (as a primary activity). Supervising household child, monitoring household child, keeping tabs on household child, checking on household child, supervising household child swimming, sitting with household child, watching but not interacting with household child.
10 Attending household children's events
11 Waiting for/with household children
12 Picking up/dropping off household children

02 Activities related to household child's education

01 Homework
02 Meetings and school conferences

03 Home schooling of household children
04 Waiting associated with household children's education
99 Activities related to household child's education, n.e.c.*
03 Activities related to household children's health
01 Providing medical care to household children
02 Obtaining medical care for household children
03 Waiting associated with household children's health
99 Activities related to household children's health, n.e.c.*

17 Traveling

03 Travel related to caring for and helping household members
01 Travel related to caring for and helping household children

Australian Time Use Survey, 1997 (From Information Paper, Time Use Survey, Australia, Confidentialised Unit Record File, 1997: 29)
5 Child Care Activities

50 Child care activities n.f.d.
500 This code was used when the information given was about child care activities but was inadequate to code elsewhere
51 Care of children
510 Care of children n.f.d. This code was used when the information given was about care of children but was inadequate to code elsewhere.
511 Physical care of children. Carrying, holding, feeding, bathing, dressing, changing babies, putting to sleep; for older children, bathing, cleaning teeth, washing, washing and brushing hair, taking to toilet, feeding, getting up, putting to bed, supervising these activities; also includes minor first aid—putting bandaids on grazes, removing splinters.
512 Emotional care of children. Includes cuddling, hugging, and soothing child.
52 Teaching/helping/reprimanding children
521. Teaching/helping/reprimanding children. Helping children do things or showing them how, listening to reading, helping with homework, directions about household chores, settling disputes, helping with problems.
53 Playing/reading/talking with child
531. Playing/reading/talking with child. Includes playing games, reading books, telling stories, listening to the activities of their day. Watching TV with or for child. Any conversation with children. Technology/communication codes needed for reading and talking to children.
54 Minding children
541 Minding children. Caring for children without the active involvement shown in the codes above. Includes monitoring children playing outside or sleeping, preserving a safe environment, being an adult presence for children to turn to in need, supervising games or swimming activities including swimming lessons. Passive child care.

55. Visiting child care establishments/school
551 Visiting child care establishment/school. Includes spending time at day care establishments, school etc. attending school assembly, parent-teacher nights, reading sessions, art/craft, school concerts etc.
57 Associated communication.
571 Associated communication. Communication related to child care activities in person, via the telephone or written. This code was used when the conversation/communication was generally about child care activities. Any specific examples were coded to the appropriate activity code with a technology code. Conversations telling others about the things they have done. This can be with a spouse, other family members, friends, teachers,; child care workers when the conversation was about the child, not the terms of work.
58 Associated travel
581 Associated travel. Travel associated with child care activities in motion/waiting. Includes taking children to and picking them up from places—school, sports training, music/other lessons, friend's or relative's house, babysitter's meeting trains, etc. Also travel to parent/teacher nights or doing something for children such as delivering things to/for them. Also includes waiting for children when picking them up.
59 Child care activities n.e.c.
599 Includes getting children's things ready for the day.

United Kingdom 2000 Time Use Survey (from *The United Kingdom 2000 Time Use Survey Technical Report* 2003: 160)

38 Childcare of own household members
380 Unspecified childcare
381 Physical care and supervision
3810 Unspecified physical care and supervision of a child
3811 Feeding the child
3819 Other specified physical care and supervision of a child
382 Teaching the child
383 Reading, playing and talking with child
384 Accompanying child
389 Other specified child care

Statistics Canada 1998 Time Use Survey (From *Cycle 12: Time Use Questionnaire Package*: 86)
10 Care giving (children and adults)

1 child care (infant to 4 years old)
18 putting the children to bed
19 getting the children ready for school
2 helping, teaching, reprimanding
3 reading to, talking/conversation with children
4 play with children
5 medical care-household children

6 unpaid babysitting-household children
7 help and other care-household children

Appendix B: Histograms of hours per day devoted to activity of child care and to ''in your care'' (married or cohabiting adults living in a household with children under 6 but no child over the age of 12) (Fig. 1)

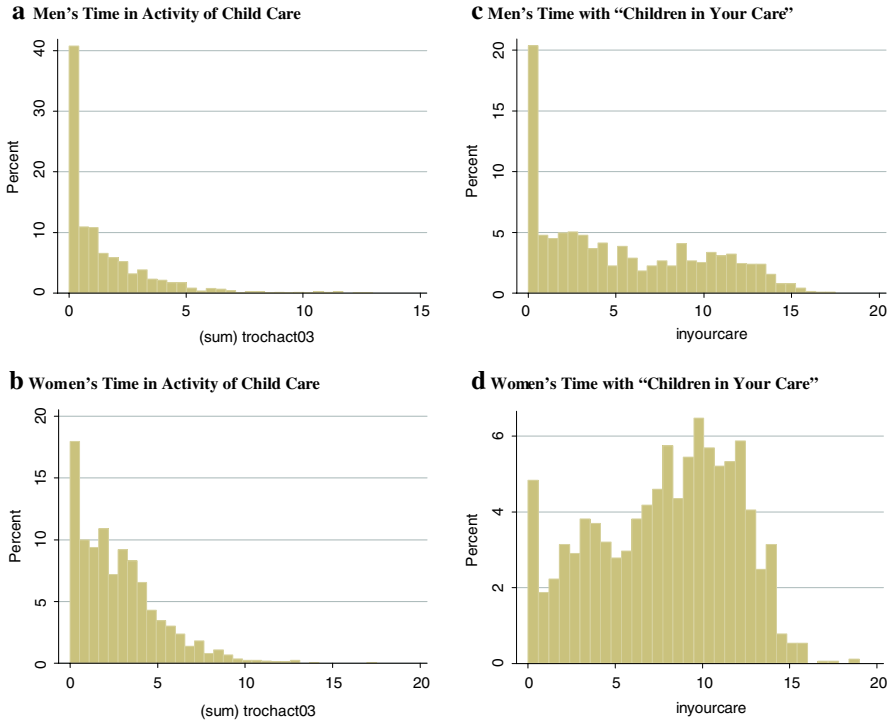

Fig. 1 (**a**) Men's time in activity of child care, (**b**) Women's time in activity of child care, (**c**) Men's time with ''children in your care'', and (**d**) Women's time with ''children in your care''

References

Australian Bureau of Statistics (ABS). (1997). *Time Use Survey, Australia, Users' Guide*. Canberra: Australian Bureau of Statistics.

Bianchi, S. (2000). Maternal employment and time with children: Dramatic change or surprising continuity? *Demography, 37*, 401–414.

Bittman, M., & Wajcman, J. (2004) The rush hour: The quality of leisure time and gender equity. In N. Folbre & M. Bittman (Eds.), *Family time: The social organization of care* (pp. 171–194). New York: Routledge.

Budig, M., & Folbre, N. (2004). Activity, proximity or responsibility? Measuring parental childcare time. In N. Folbre & M. Bittman (Eds.), *Family time, the social organization of care*. New York: Routledge.

Craig, L. (2005). The effect of children on adults' time-use: An analysis of the incremental time costs of children in Australia. SPRC discussion paper No.143 Social Policy Research Centre, UNSW.

Fedick, C. B., Pacholok, S., & Gauthier, A. H. (2005) Methodological issues in the estimation of parental time: Analysis of measures in a Canadian Time-Use Survey. *Electronic International Journal of Time Use Research, 2*(1), 14–36.

Folbre, N., Yoon, J., Finnoff, K., & Fuligni, A. (2005). By what measure? Family time devoted to children in the US. *Demography, 42*(2), 373–390.

Frederick, J. (1993). Measuring child care and sleep: Some results from the 1992 general social survey. Paper presented at the Meetings of the International Association for Time Use Research, University of Amsterdam, Netherlands.

Gauthier, A., Furstenberg Jr., F., & Smeeding, T. (2004). Are parents investing less time in children? Trends in selected industrialized countries. *Population and Development Review, 30*(4):647.

Giannarelli, L., Adelman, S., & Schmidt, S. (2005). Getting help with child care expenses. Urban Institute Occasional Paper Number 62. Available online: www.urban.org/uploaded PDF/310615_OP62.pdf.

Harvey, A., & Royal, M. (2000). Use of context in time-use research. Paper presented at expert group meeting on methods for conducting time-use surveys, 23–27 October, New York, NY.

Horrigan, M., & Herz, D. (2004). Planning, designing, and executing the BLS American time-use survey. *Monthly Labor Review*, October, 3–19.

Ironmonger, D. (2004). Bringing up betty and bobby: The inputs and outputs of childcare time. In N. Folbre & M. Bittman (Eds.), *Family time: The social organization of care* (pp 93–109). London: Routledge.

Mattingly, M. J., & Bianchi, S. (2003). Gender differences in the quantity and quality of free time: The US experience. *Social Forces, 81*(3), 999–108.

Schwartz, L. K. (2001). Minding the children: Understanding how recall and conceptual interpretations influence responses to a time-use summary question. U.S. Bureau of Labor Statistics, unpublished paper. Available on-line: http://www.bls.gov/ore/pdf/st010180.pdf

Shelley, K. J. (2005). Developing the American time use survey activity classification system. *Monthly Labor Review, 128*(6), 3–15.

UK (United Kingdom). (2003). The United Kingdom 2000 Time Use Survey. Technical Report. London: National Statistics.

U.S. Bureau of Labor Statistics. (2004). American Time Use Survey Coding Rules Full Production.

Zuzanek, J. (2001). Parenting time: Enough or too little? *Isuma*, *2*(2), 125–133.