Céline Schoeni, **Travail féminin: Retour à l'ordre! L'offensive contre le travail des femmes durant la crise économique des années 1930 [Women's work: Back to order! The offensive against women's work during the economic crisis of the 1930s]**

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IF YOU'RE HAPPY AND YOU KNOW IT: HOW DO MOTHERS AND FATHERS IN THE US REALLY FEEL ABOUT CARING FOR THEIR CHILDREN?

Rachel Connelly and Jean Kimmel

ABSTRACT

This paper considers the question posed by popular media: Do women like doing childcare more than men? Using contemporaneous subjective well-being data paired with 24-hour time diaries from the 2010 American Time Use Survey, the paper explores gender differences in how mothers and fathers feel when engaged in a set of common daily activities. We find that both mothers and fathers engaged in child caregiving enjoy their time spent in child caregiving; fathers as much, or even more so, than mothers as evidenced by their average values for happiness, meaningfulness, tiredness, and stress and an aggregated statistic, the unpleasantness index. Simulations provide evidence that the difference between mothers and fathers comes almost completely from differences in their subjective well-being rather than from differences in how they use their time.

KEYWORDS

Time use, subjective well-being, childcare, gender wage gap, happiness, experience emotions

JEL codes: D13, J13, J16

INTRODUCTION

In March 2012, *The New York Times* website ran the headline, "Do Women Like Child Care More than Men?"[1] The answer according to author Tara Parker-Pope is yes, based on a recently published academic paper by Steven Rhoads and Christopher Rhoads (2012). The *NYT*'s bold headline, despite Rhoads and Rhoads' more narrow focus and their concerns about reliability and relevance,[2] serves to reinforce public perceptions about gendered preferences and runs the risk of justifying a host of other societal gender differences, including gender disparities in earnings.

Historically, fathers have engaged in more paid work, while mothers have devoted disproportionately more time to unpaid work in the home,

particularly caring for children. These substantial gender differences in time spent with children have narrowed in recent years, yet persist, despite the dual facts that young women now attend college at a higher rate than men and that wages of recent men and women college graduates are now very similar.[3] Nancy Folbre (2004) argues that the time-use outcomes we observe today are not necessarily the result of free individual choice, nor are they necessarily efficient. She asserts that the inherent difficulties in coordinating caregiving activities has resulted in the evolution of institutions designed to facilitate this coordination that may be resistant to change.

The persistence in these disparate time allocation outcomes by gender is important due to the well-established link between time devoted to home production and lower labor-market earnings. Joni Hersch (2009) uses data from the American Time Use Survey (ATUS) to examine the link between market wages and unpaid work in the home. She concludes that the negative relationship exists for both men and women, but is stronger for women, and can neither be explained by lesser effort nor as compensating differentials.[4] As Folbre explains,

> it is difficult to distinguish cause and effect in family time allocation. Do women tend to devote more time to housework and childcare than men do because their wages are lower, or are their wages lower because they devote more time to housework and childcare? (2004: 11)

The suggestion, as demonstrated by the *New York Times*' bold headline, that women enjoy child caregiving more than men has been offered as a partial explanation for the slowdown in the gender revolution (Stephanie Coontz 2013). Testing the validity of this assertion is the motivating force behind our research. We use newly available data from the ATUS 2010 on self-reports of emotions experienced during various activities of the previous day to examine whether mothers' child caregiving time is associated with higher positive and lower negative emotions than fathers'.

We use this time-diary data with its accompanying emotions information three ways. First, we use descriptive statistics and ad hoc regressions to describe the gender differences in time use and emotions experienced during those activities. Then, we extend the definition of child caregiving time to include time spent with children present. Finally, we construct an aggregate measure of well-being, an Unpleasantness Index (U-index), which determines the percentage of time devoted to activities that are experienced as unpleasant.[5] Our findings are fourfold. Consistent with previous research, we find that mothers devote more time caring for children than fathers. Second, comparing means as well as regression coefficients for the different emotions reported during child caregiving activities, we fail to find evidence supporting the claim that mothers enjoy

childcare more than fathers. Including time in other activities done in the presence of children also does not support the hypothesis that mothers like child caregiving more than fathers. Third, the comparison of mothers' and fathers' caregiving U-indices provides even more substantive evidence that there simply is no empirical evidence that mothers enjoy childcare more than fathers. The gap in U-index scores for aggregated child caregiving time is quite substantial – mothers experience child caregiving time as unpleasant twice as often as fathers. Finally, we show that mothers' greater U-index values can be attributed to their higher negative-emotions scores and lower positive-emotions scores, rather than the gender differences in parents' time use.

This research is important because both policymakers and the public need broader-based and more objective information than that provided by Rhoads and Rhoads (2012). Concerns about persistent gender wage gaps, which tend to worsen during mothers' childbearing years, may be falsely ameliorated by mistaken assumptions about gendered preferences. After all, if mothers earn lower wages because they enjoy their time with children more than fathers, then why worry about the resulting gender wage gap? In addition, to the extent that men also enjoy time spent with their young children (and we find that they do, as much or even more so than women), then mothers and fathers would benefit from institutional and policy changes that allow both parents to take active roles in parenting, while maintaining their strong continuous labor force commitment.

MEASUREMENT AND ANALYSIS OF SUBJECTIVE WELL-BEING

Measures of well-being

To date, researchers have relied on three main types of measures of emotions, the most common being global measures of life satisfaction. Global measures come from questions like those asked by the General Social Survey, "Taken all together, how would you say things are these days? Would you say that you are very happy, pretty happy, or not too happy?" This type of measure leads to a broad-based multidimensional assessment of one's total life (including all time use). We refer to these as global retrospective subjective well-being (GRSWB) measures.

The second type of emotion measure involves assessment of specific activities, permitting researchers to compare emotions across activities. F. Thomas Juster and Frank Stafford's time-use collection effort (1985) included questions asking about satisfaction with various activities in one's life. These questions call for retrospective judgment, much like the GRSWB measures, and are not tied explicitly to a specific episode of the given activity. We can think of these measures as activity-level RSWB measures.

The Rhoads and Rhoads (2012) survey questions are activity-level RSWB measures; however, they only asked about child caregiving activities. One problem associated with activity-level RSWB measures is that respondents may have a sense of how they "should" feel about the activity that produces responses that conflate emotions with notions of meaningfulness and family responsibility. This problem may be particularly acute with child caregiving activities given that respondents may feel that because spending time with children is important (for the children), parents ought to report relatively greater levels of happiness when engaged in such activities.

The third type of emotions measure is solicited via questions designed to gauge contemporaneous subjective well-being (CSWB).[6] These questions are more targeted, asking respondents about how they feel while engaged in a specific activity at a specific time. These measures are intended to approximate "process utility," the utility resulting directly from time spent engaged in an activity. Conceptually, process utility is distinct from total utility because the latter includes both process utility and outcome utility (that is, the utility resulting from consuming the outcome of the activity).[7]

Mihaly Csikszentmihalyi (1990) and Arthur Stone and Saul Shiffman (1994) experimented with collecting real time CSWB with the "experience sampling method," which involved survey respondents carrying electronic devices that prompted them several times during the day with questions about what they are doing and how they are feeling. Unfortunately, this data collection methodology is prohibitively costly and invasive. More recently, Daniel Kahneman, Alan Krueger, David Schkade, Norbert Schwarz, and Arthur Stone (2004) have experimented with the "day reconstruction method" (DRM), which links the collection of CSWB data to time-diary surveys with one-day recall.[8] They find similar patterns of emotions by time of day and type of activity from the DRM compared with the "experience sampling method." However, when the results of the DRM are compared with the RSWB questions of Juster and Stafford (1985), large differences are found (Jonathan Gershuny and Brendan Halpin 1996; John Robinson and Geoffrey Godbey 1997; Daniel Kahneman and Alan Krueger 2006; Alan Krueger, Daniel Kahneman, David Schkade, Norbert Schwartz, and Arthue Stone 2009).

In a further effort to reduce respondent burden and collection costs, Kahneman and Krueger's research team conducted the 2006 Princeton Affect and Time Use Survey (PATS) in which CSWB data are collected using the DRM for only three of the many activities in which respondents had engaged the previous day. The three activities are randomly selected from all of their activities, with the exception of sleep, grooming, and private activities, in proportion to the duration of the activity (Krueger et al. 2009). The 2010 ATUS subjective well-being module has a similar design to the PATS survey, with the exception that questions are asked about five instead

of six emotions: happiness, sadness, tiredness, stress, and pain.[9] Both PATS and ATUS respondents were asked to assign values of zero to six to each emotion for the three selected activities, with zero being no emotion and six being a very strong emotion.

Previous literature on the relationship between parenthood and well-being

Given the enormous impact that children have on parents' lives, it is not surprising that parents report statistically significantly different well-being than nonparents. Jennifer Senior (2014) highlights the contradiction between what parents say about parenting in general and the emotions they report while actually engaged in caregiving. According to Angus Deaton and Arthur Stone, this inconsistency results from "focusing illusion" – that is, "time spent with children is remembered fondly, but not rated very highly at the time" (2013: 592). Thomas Hansen (2012) provides a comprehensive review of the evidence and various theories found in the literature to explain why parents tend to report lower scores for GRSWB measures, but when individuals are surveyed on the question of which life is a more fulfilling one (one that involves parenting versus one that does not), the former is deemed more meaningful. While Hansen does not examine CSWB measures, he does carefully consider gender differences, noting that parenthood seems to affect women's GRSWB measures more than men's.

Angus Deaton and Arthur Stone (2014) analyze data from the Gallup–Healthways Wellbeing Index, a Gallup survey that collects GRSWB measures. They note that parents tend to report greater well-being than nonparents, but when the endogeneity of parenthood is controlled this finding is reversed. They also note that parents report more joy in their lives, as well as more stress.

Martha McDonald, Shelley Phipps, and Lynn Lethbridge (2005) use Canadian data to examine differences in GRSWB stress levels between prime-aged men and women. They find that the presence of school-age children statistically significantly increases the global level of stress faced by women, but not men. Similarly, they find that more hours of child caregiving per week statistically significantly increase women's stress levels, but not men's.[10]

Marianne Bertrand (2013) relies on both the GRSWB and CSWB measures to examine the well-being of college-educated women in the United States. She finds that women enjoy a well-being "premium" from having children or a career, but not when doing both. When using the CSWB measures, Bertrand does not control for differential uses of time among the groups of college-educated women she compares, as she argues that she purposefully wants to concentrate on more global well-being metrics.[11]

Krueger et al. (2009) compare activity-level RSWB with CSWB measures of subjective well-being, collected jointly for a sample of 252 Texas women, to examine differences between the measures. These women report relatively high positive emotions for both paid work and child caregiving, but child caregiving is rated more highly via RSWB measures than CSWB measures. Gershuny and Halpin (1996) and Robinson and Godbey (1997) also include comparisons of RSWB and CSWB and find that RSWB measures tend to be higher than CSWB measures for both employment and child caregiving. Wendy Wang (2013) describes the same ATUS data that we analyze in this paper, focusing on parents and comparing across gender CSWB for caregiving tasks versus paid work and other activities. She notes that mothers tend to report greater levels of tiredness than fathers, but also report greater meaningfulness scores for housework (exclusive of child caregiving) and leisure.[12]

EVIDENCE FROM THE 2010 ATUS ON TIME USE AND CSWB BY GENDER IN THE US

The ATUS is an annual survey that has been conducted by the US Bureau of Labor Statistics since 2003. The core of the ATUS is a 24-hour time diary. For each specific activity, the respondent is also asked who was in the room while the activity was undertaken. Below, we use the information concerning who was in the room to incorporate secondary child caregiving time into our analysis, permitting the consideration of whether activities done in the presence of children elicit different emotional responses than the same activities performed without children present.[13]

In addition to the 24-hour time diary, the ATUS collects basic demographic information for the diary respondents and the other members of their households. Men and women are designated fathers and mothers in this analysis if they co-reside with their own child who is under age 18 (See Data Appendix for further detail on the specific definition of mothers and fathers.). Since our focus is on CSWB differences between mothers and fathers with respect to child caregiving, we limit our analysis to mothers and fathers who report positive minutes of own-household child caregiving on their diary day and who answered the CSWB questions. These selection criteria result in an analysis sample of 3,295 individuals.[14]

The six measures of CSWB available in the ATUS are happiness, sadness, pain, tiredness, stress, and meaningfulness. While there is some correlation between the five emotions and meaningfulness, with happiness negatively correlated with the negative emotions, and the negative emotions positively correlated with one another, the correlations are not strong. Meaningfulness is moderately positively correlated with happiness, but it is also slightly positively correlated with pain for mothers and with tiredness for mothers engaged in child caregiving activities. The full set of

correlations is available in Supplemental Table 1, available online on the publisher's website.

Meaningfulness is a new inquiry for CSWB research. It was not included in the PATS data, and it is treated differently from the other five emotions in the 2010 ATUS survey. The order in which the other five emotions questions are asked rotates, while meaningfulness is always asked last. One could argue that meaningfulness is not an emotion, but rather, is measuring another dimension of utility – that is, another reason for engaging in the activity, distinct from how it makes one feel at that moment. For this reason, later we present the results of the U-indices calculated with and without meaningfulness included.

Table 1 shows the average minutes parents spent in nineteen of the largest time-use categories. These nineteen categories are the only ones (excluding travel categories) that have sufficiently large sample sizes in the CSWB questions to permit comparisons between mothers and fathers.[15] In addition to average minutes in each included time category, Table 1 shows the proportion of total CSWB-eligible time (excluding sleep and personal care) spent in each activity category. The nineteen categories represent about 80 percent of CSWB-eligible time. Six specific child caregiving activities are included: "physical care of children," "playing with children," "talking with children," "picking up or dropping off children," "rest of caring for children," and "education-related child caregiving." The sample sizes for each of the nineteen activities for mothers and fathers are presented in the last columns of Table 1.

We include child caregiving activities at the most detailed level available because there is good reason to think that parents enjoy some types of child caregiving more than others, and that parents view their time in certain activities as more valuable in terms of its impact on child development. Catalina Amuedo-Dorantes and Almudena Sevilla-Sanz (2013) show that over time, college-educated mothers have increased their time in "educational/recreational" child caregiving more than "basic" caregiving. Rachel Connelly and Jean Kimmel (forthcoming) analyze differences in CSWB averages across gender and parenting status for "developmental" versus "maintenance" caregiving.[16] In both Amuedo-Dorantes and Sevilla-Sanz (2013) and Connelly and Kimmel (forthcoming), the caregiving categories were aggregated by the researchers *ex ante*. Here, we use the most disaggregated categories possible to allow for differences in CSWB scores while engaged in different types of child caregiving activities.

Overall, Table 1 shows that the time use of mothers and fathers remains quite different. We find that mothers spend more time than fathers in four of the six child caregiving categories with equal time in the "playing with children" and in the "rest of caring for children." Jose I. Gimenez-Nadal and Almudena Sevilla-Sanz (2012) report on trends in time allocation for seven Western countries, and find that despite trends toward convergence,

Table 1 Time use of mothers and fathers

	Total minutes on diary day			*Percentage of awake time*			*CSWB sample size by activity*	
	Fathers	*Mothers*	*Sig. diff.?*	*Fathers*	*Mothers*	*Sig. diff.?*	*Fathers*	*Mothers*
Child caregiving activities								
Physical care of children	28	54	***	3.2%	6.4%	***	264	654
Playing with children	31	27		3.5%	3.1%		95	137
Talking with children	4	5	**	0.4%	0.6%	**	30	54
Picking up or dropping off children	4	6	***	0.4%	0.7%	***	64	143
Rest of caring for children	21	23		2.3%	2.7%		85	206
Education-related child caregiving	7	12	***	0.8%	1.4%	***	31	56
Other included activities								
Interior cleaning	13	39	***	1.5%	4.5%	***	36	191
Food prep	22	48	***	2.5%	5.7%	***	141	491
Kitchen cleanup	4	14	***	0.5%	1.7%	***	30	164
Financial management	6	7		0.6%	0.8%		37	77
Working main job	294	169	***	31.4%	18.6%	***	243	282
Grocery shopping	6	10	***	0.7%	1.1%	***	30	62
Shopping not groceries	11	19	***	1.3%	2.2%	***	60	115
Eating/drinking	67	61	***	7.6%	7.2%		407	637
Socializing with others	32	34		3.6%	3.9%		105	182
Relaxing/doing nothing alone	8	12	**	0.9%	1.4%	**	30	59
Watching TV	123	106	***	14.1%	12.7%	**	195	334
Rest of relaxing and leisure	25	26		2.7%	3.0%		59	136
All of participating in sports, exercise, and recreation	18	10	***	2.1%	1.1%	***	45	60

(*Continued*)

Table 1 Continued

	Total minutes on diary day			*Percentage of awake time*			*CSWB sample size by activity*	
	Fathers	*Mothers*	*Sig. diff.?*	*Fathers*	*Mothers*	*Sig. diff.?*	*Fathers*	*Mothers*
Aggregate time-use categories								
All 19 included activities	725	683	***	80.1%	79.0%		1987	4040
All 6 included child caregiving activities	95	127	***	10.7%	14.9%	***	569	1250
Number of individual respondents	1,115	2,180		1,115	2180			

Notes: The sample is limited to mothers and fathers who reported some child caregiving minutes during their diary day. Columns 3 and 4 use the total time spent in all subjective well-being eligible activities (essentially, all activities except sleeping and personal care time) as the denominator. These percentages can be interpreted as the percentage of awake time per day. The criterion used to include an activity is that there must be 30 or more CSWB responses from both mothers and fathers. Significance columns are based on simple *t*-tests that control for sample weights. ***, **, * denote statistical significance at the 1, 5, and 10 percent levels, respectively.

women in each of the countries studied continue to engage in substantially more child caregiving than men. Focusing just on child caregiving hours of cohabiting mothers and fathers, Inmaculada García-Mainar, José Alberto Molina, and Víctor Montuenga (2011) find that mothers' child caregiving hours are fairly similar across the five European countries they study, ranging between 30 to 37 hours per week, while fathers' hours in child caregiving vary from 7.5 hours a week in Spain to 19.5 a week in Denmark.

There are many possible explanations for the persistence in time-use differences between mothers and fathers. They may have different opportunity costs of their time due to different marginal wage rates; they may have differing productivities; they may have different preferences; or they may be constrained by societal norms and institutional limitations. Liana Sayer, Paula England, Michael Bittman, and Suzanne Bianchi (2009) compare the sociological view of persisting cultural and social gender role norms versus the economic view, which they cast as differences in comparative advantage. They find evidence to support the sociological view. Michael Bittman, Paula England, Liana Sayer, Nancy Folbre, and George Matheson (2003) argue that cultural norms and economic factors interact such that women who earn less than their husbands respond differently to increases in their own wage compared with women who earn more than their husbands. Those who earn more than their husbands appear

to increase their housework time in order to "do gender." Yet another potential economic explanation for the child caregiver gender gap is that productivities in one task may be dependent upon other tasks performed. For example, if a parent is home caring for children, then he or she is able to perform housework tasks that must be done at home and can be done in small time increments in between child caregiving tasks.[17] Since most employment time takes place outside the house, those with more time in employment will have less opportunity to squeeze in household tasks. This bundling of tasks based on location or inherent differences in the interruptability of tasks may be an important, but not well understood, element of the gender difference in time use.[18] Finally, Pia Schober (2013) shows that habit may play a role. Using German data, she finds that women who withdraw from the labor market when their children are young continue to do more of the household chores, even after they return to the labor market. The point of this long list is that certainly not all the differences we observe in Table 1 are the result of preferences or "free" choice. Thus, it is interesting to consider directly differences in how mothers and fathers feel while engaged in an activity.

Table 2 reports CSWB results for four of the six ATUS measures: happiness, meaningfulness, stress, and tiredness. For each emotion, we present the weighted mean score by gender. Additionally, the table contains results from ad hoc ordinary least-squares (OLS) regressions, for the focal regressor, the FEMALE indicator variable. The regressions are run separately for each included activities, for total aggregate time of all nineteen activities, and for aggregated child caregiving time of all six child caregiving activities. The regression equation is:

$$\text{CSWB score for emotion j for person i in activity k} = \beta_0 + \beta_1 * \text{FEMALE}_i + \beta_2 * \text{Age}_i + \beta_3 * \text{Age-Squared}_i + \beta_4 X_{ik} + \varepsilon_{ik} \quad (1)$$

The control variables include the FEMALE indicator, the individual's age and age squared, and a set of characteristics of the activity, X_{ik}, including the duration of activity episode, total duration of activity that day, the day of the week, month of the year, start time category, and order of CSWB question.[19] Table 2 reports simply whether the FEMALE dummy variable is statistically significantly different from zero and, if so, if the coefficient is positive or negative. This regression result permits us to determine whether men and women report statistically significantly different emotions having controlled for timing and duration of the activity, among other factors.[20]

The first two columns of Table 2 Panel A present the average happiness scores for mothers and fathers. These results provide preliminary evidence to answer our research question, Do mothers like childcare more than fathers? Certainly, happiness is a big part of "liking" something. Both

Table 2 Panel A Average happiness and meaningfulness scores by activity

	Happiness				*Meaningfulness*			
			t-test result	*Regression result*			*t-test result*	*Regression result*
	Fathers	*Mothers*	*Women significantly different?*		*Fathers*	*Mothers*	*Women significantly different?*	
Aggregate time-use categories								
All 19 included activities	4.285	4.371			4.594	4.560		
All 6 included child caregiving activities	4.964	4.943			5.378	5.292		
Child caregiving activities								
Physical care of children	4.557	4.652			5.015	5.074		
Playing with children	5.585	5.407			5.842	5.466	**	(-) lower meaningfulness
Talking with children	5.123	5.073		(-) lower happiness	5.432	5.275		
Picking up or dropping off children	4.386	4.235			4.725	4.924		
Rest of caring for children	5.254	5.093			5.319	5.511		
Education-related child caregiving	4.591	4.397			5.342	5.418		
Other included activities								
Interior cleaning	3.670	4.073			3.587	4.317		
Food prep	4.542	4.489			4.703	4.713		
Kitchen cleanup	3.818	3.719			4.089	3.714		
Financial management	4.180	2.607	**	(-) lower happiness	3.776	4.508		
Working main job	3.780	3.994		(+) higher happiness	4.499	4.435		
Grocery shopping	3.033	4.080	**	(+) higher happiness	3.427	3.966		

(*Continued*).

Table 2 Continued

	Happiness				*Meaningfulness*			
			t-test result	*Regression result*			*t-test result*	*Regression result*
	Fathers	*Mothers*	*Women significantly different?*		*Fathers*	*Mothers*	*Women significantly different?*	
Shopping not groceries	4.138	4.643		(+) higher happiness	4.069	4.075		
Eating/drinking	4.825	4.785			4.728	4.767		
Socializing with others	4.672	4.696			4.977	5.287		
Relaxing/doing nothing alone	4.569	3.709			4.672	4.094		
Watching TV	4.461	4.198			3.916	3.781		
Rest of relaxing and leisure	4.456	4.179		(-) lower happiness	4.622	3.459	*	
All of participating in sports, exercise, and recreation	5.382	5.311			5.004	5.410		

Notes: All samples are restricted to those mothers and fathers who had some minutes of household child caregiving during their diary day. CSWB questions are only asked of respondents who participated in that activity. The regression column represents the significance of the FEMALE indicator variable in an OLS regression. The regression also included the time of day of the activity in intervals, the day of the week, month of the year, the duration of the activity questioned, the total duration of that activity on diary day, order that that emotion appeared in the survey, age and age squared of the respondent. The regression, t-tests, and averages are weighted by activity duration weights following the methodology provided by the BLS. Significance columns based on simple t-tests of weighted means are coded: ***, **, * denote statistical significance at the 1, 5, and 10 percent levels, respectively. Regression results are reported at the 5% significance level.

Table 2 Panel B Average stress and tiredness scores by activity

	Stress				*Tiredness*			
			t-test result	*Regression result*			*t-test result*	*Regression result*
	Fathers	*Mothers*	*Women significantly different?*		*Fathers*	*Mothers*	*Women significantly different?*	
Aggregate time-use categories								
All 19 included activities	1.667	1.739		(+) higher stress	2.155	2.645	***	(+) higher tiredness
All 6 included child caregiving activities	1.117	1.193		(+) higher stress	2.198	2.536	**	(+) higher tiredness
Child caregiving activities								
Physical care of children	1.210	1.287		(+) higher stress	2.513	3.026	**	(+) higher tiredness
Playing with children	0.795	0.777			2.067	2.341		
Talking with children	1.377	1.231			2.564	2.803		
Picking up or dropping off children	1.232	1.589			1.418	2.812	***	(+) higher tiredness
Rest of caring for children	1.207	0.969			2.198	1.912		
Education-related child caregiving	1.532	2.473	**	(+) higher stress	1.832	2.275		
Other included activities								
Working main job	2.447	2.484			2.130	2.758	***	(+) higher tiredness
Interior cleaning	2.641	1.820			2.379	2.623		
Food prep	1.201	1.446			1.988	2.763	***	(+) higher tiredness
Kitchen cleanup	0.895	1.572	*	(+) higher stress	2.360	2.961		(+) higher tiredness
Financial management	0.767	3.118	***	(+) higher stress	1.778	2.949	**	
Grocery shopping	2.292	2.056			1.677	2.338		(+) higher tiredness
Shopping not groceries	1.555	1.814			2.036	2.047		

(*Continued*).

Table 2 Continued

	Stress				*Tiredness*			
			t-test result	*Regression result*			*t-test result*	*Regression result*
	Fathers	*Mothers*	*Women significantly different?*		*Fathers*	*Mothers*	*Women significantly different?*	
Eating/drinking	1.185	1.400		(+) higher stress	1.936	2.363	**	(+) higher tiredness
Socializing with others	1.161	1.581			1.658	2.352	**	(+) higher tiredness
Relaxing/doing nothing alone	1.335	2.275			2.225	3.707	***	(+) higher tiredness
Watching TV	0.761	1.453	***	(+) higher stress	2.527	2.971		
Rest of relaxing and leisure	1.098	1.212			3.091	2.309		
All of participating in sports, exercise, and recreation	0.439	0.987	**	(+) higher stress	1.447	2.632	**	(+) higher tiredness

Notes: All samples are restricted to those mothers and fathers who had some minutes of household child caregiving during their diary day. CSWB questions are only asked of respondents who participated in that activity. The regression column represents the significance of the FEMALE indicator variable in an OLS regression. The regression also included the time of day of the activity in intervals, the day of the week, month of the year, the duration of the activity questioned, the total duration of that activity on diary day, order that that emotion appeared in the survey, age and age squared of the respondent. The regression, *t*-tests, and averages are weighted by activity duration weights following the methodology provided by the BLS. Significance columns based on simple *t*-tests of weighted means are coded; ***, **, * denote statistical significance at the 1, 5, and 10 percent levels, respectively. Regression results reported at the 5% significance level.

mothers and fathers report high levels of happiness when engaged in child caregiving, higher than most other activities. Employment provides a much lower level of happiness than child caregiving. The average happiness level during an employment episode is statistically equivalent for men and women (equally low). Similarly, men and women report statistically similar levels of happiness (based on a simple *t*-test) for all of the child caregiving categories and for the aggregated child caregiving category. Only two of the nineteen activities are statistically significantly different between mothers' and fathers' average happiness CSWB responses: financial management (particularly disliked by mothers) and grocery shopping (particularly disliked by fathers). Overall, despite the very different uses of time between mothers and fathers shown above in Table 1, Table 2 shows that mothers and fathers report similar levels of happiness when engaged in the same activities.

Lab experiments have shown that average reported emotion may be different from average experienced emotion, since respondents tend to remember the end of the episode more vividly than the middle and also overweight the emotional peaks and troughs (Daniel Kahneman, Barbara Fredrickson, Charles A. Schreiber, and Donald Redelmeier 1993). Thus, there may be concerns about the effect that diminishing marginal utility plays on reported CSWB scores. Since women perform more child caregiving than men, their marginal happiness at the end of a period of caregiving may be lower; thus, their reported positive emotions may be lower (Emily Oster 2013). According to Bryan Caplan, "a major reason for parents' lack of enthusiasm for their role is simply diminishing marginal utility. Average enjoyment of parenting is so low because parents are overdoing it (2009: B6)." The regression equation controls for the duration of time engaged in the activity in order to address the issue of diminishing marginal utility.

The results for the FEMALE dummy from OLS regression models predicting the happiness scores are reported in the third column of Table 2 Panel A. They show that once the factors listed above are controlled, women report lower happiness scores for the category "talking with children." In the other five child caregiving regressions and the aggregated child caregiving activities, the coefficient for the FEMALE indicator variable is not statistically significant, implying no gender difference. The regression results provide evidence that mothers and fathers who engage in child caregiving some time during the day report being equally happy when all child caregiving activities are aggregated as well as in each of the specific categories of household child caregiving except talking with children, during which fathers are happier than mothers.

As discussed above, the ATUS allows us to look beyond happiness. The remaining columns of Table 2 Panel A present the average scores assigned the meaningfulness of the activity. Parents give high scores for

meaningfulness for all child caregiving activities, noticeably higher than the happiness score, with the largest gap in education-related child caregiving. For aggregated child caregiving and for five of the six specific caregiving categories, mothers and fathers report equal levels of meaningfulness. The one exception is playing with children, for which fathers report higher level of meaningfulness than mothers, as evidenced by both the t-test and the regression result.

Table 2 Panel B presents results for two negative emotions – tiredness and stress; and it is here that substantial gender differences emerge.[21] Mothers report a higher level of tiredness than fathers in most activities, including the aggregate child-caregiving activity, as well as the specific categories of physical care and picking up and dropping off. The regression results provide evidence that mothers' higher level of reported tiredness is not simply a function of duration of activity, nor the time of day when the activity is performed.[22] Daniel Hamermesh and Jungmin Lee (2007) and the Pew Research Center (2006) provide similar evidence of differences in tiredness between men and women. Wang (2013) looks more specifically at mothers and fathers and finds that mothers report being more tired than fathers in all four aggregated categories: work, housework, child caregiving, and leisure.

There are fewer statistically significant differences between mothers and fathers in average stress scores than for average tiredness scores, but in all the cases where statistically significant differences are observed, mothers report higher stress levels than fathers. Child caregiving activities (except for education-related caregiving for mothers) have lower levels of reported stress. Looking at the regression results, for the aggregate child-caregiving category, mothers report statistically significantly higher stress scores than fathers.

CSWB SCORES FOR NON-CAREGIVING ACTIVITIES WHEN CHILDREN ARE PRESENT

The work of Nancy Folbre, Jayoung Yoon, Kade Finnoff, and Allison Fuligni (2005), among others, reminds us that child caregiving is a complicated concept. There are times when one's primary activity is caregiving, meaning that one is actively engaged in interacting with children or doing work that is only necessary because of children such as attending a parent–teacher conference. But actual child caregiving extends beyond those specific child-related activities. One may be still engaged in child caregiving while cooking dinner, if one is simultaneously supervising play or overseeing homework. Cooking dinner with young children present may be more stressful than cooking without such responsibility, but it is also possible that the pleasure of cooking is enhanced due to the presence of one's (older) children. The caregiving that occurs while primarily engaged in other

Table 3 Comparison of mothers' and fathers' selected CSWB scores with and without a child present

	Mothers			*Fathers*			*Mothers*			*Fathers*		
	With children present	*W/o children present*	*Sig. diff.?*	*With children present*	*W/o children present*	*Sig. diff.?*	*With children present*	*W/o children present*	*Sig. diff.?*	*With children present*	*W/o children present*	*Sig. diff.?*
	Happiness						*Meaningfulness*					
Aggregate time-use category												
All 13 non-child caregiving activities	4.52	4.16		4.47	4.13		4.45	4.36		4.42	4.44	
Non-child caregiving activities												
Food prep	4.68	4.38		4.86	4.47		4.94	4.59		5.38	4.55	***
Eating/drinking	4.96	4.72		4.60	4.85		4.78	4.76		5.08	4.68	**
Interior cleaning	4.40	3.96					4.39	4.29				
Kitchen cleanup	3.92	3.66					4.00	3.63				
Grocery shopping	4.46	3.82					4.55	3.56				
Shopping not groceries	4.80	4.57					4.25	3.99				
Rest of relaxing and leisure	4.19	4.18					3.05	3.61				

(*Continued*)

Table 3 Continued

	Mothers			*Fathers*			*Mothers*			*Fathers*		
	With children present	*W/o children present*	*Sig. diff.?*	*With children present*	*W/o children present*	*Sig. diff.?*	*With children present*	*W/o children present*	*Sig. diff.?*	*With children present*	*W/o children present*	*Sig. diff.?*
	Stress						*Tired*					
Aggregate time-use category												
All 13 non-child caregiving activities	1.50	1.96	***	1.02	1.85	***	2.45	2.72	*	2.12	2.15	
Non child caregiving activities												
Food prep	1.53	1.40		1.53	1.13		2.33	3.01	**	1.69	2.06	
Eating/drinking	1.38	1.41		1.01	1.21		2.10	2.45		2.07	1.92	
Interior cleaning	1.58	1.90					2.61	2.63				
Kitchen cleanup	1.56	1.57					3.81	2.70	**			
Grocery shopping	2.41	1.81					2.32	2.35				
Shopping not groceries	2.38	1.55	*				2.16	2.00				
Rest of relaxing and leisure	1.41	1.14					2.39	2.28				

Notes: All samples are restricted to those mothers and fathers who had some minutes of household child caregiving during their diary day. The criterion used to include an activity is that there must be a sample size of 30 or more CSWB responses in each of the two groups being compared. Averages and t-tests are weighted by activity duration weights following the methodology provided by the BLS. Significance columns are based on simple t-tests that control for sample weights within gender across child present categories. ***, **, * denote statistical significance at the 1, 5, and 10 percent levels, respectively.

activities is commonly known as secondary child caregiving. Because of the importance of both primary and secondary child caregiving in parents' lives, we extend our analysis to a comparison of CSWB scores of non-child caregiving activities performed in the presence of children.

Only two of the thirteen specific non-child caregiving activities – food preparation and eating and drinking – have sample sizes large enough to compare between mothers and fathers, once we control for activities engaged in with and without children present. We find that mothers and fathers, regardless of the presence of children, are quite similar to one another in their average CSWB scores. The only statistically significant difference across mothers and fathers controlling for the presence of children are: (1) Mothers with children present report higher happiness scores when eating and drinking, higher tiredness scores when doing food preparation, and higher stress scores in the aggregated thirteen non-child caregiving categories than fathers with children present; (2) Mothers without children present are more tired than fathers without children present when eating and drinking, doing food preparation, and in the aggregated non-child caregiving categories.

There are five additional non-child caregiving activities with sufficiently large sample sizes of mothers to compare mothers' mean CSWB scores by the presence of children. These results, plus eating and drinking and food preparation and aggregate, are presented in Table 3. The results show that there are no statistically significant differences in average happiness scores for either mothers or fathers by the presence of children. Meaningfulness also is not affected by the presence of children for mothers, but fathers report statistically significantly higher meaningfulness scores for aggregated non-child caregiving activities when children are present. Overall, Table 3 provides suggestive evidence that incorporating secondary child caregiving does not change the basic results reported in the previous section; most importantly, that mothers and fathers appear to be equally happy with child caregiving and find it similarly meaningful, while overall, mothers are more tired and often more stressed than fathers in a host of activities.

AGGREGATING THE SUBJECTIVE WELL-BEING MEASURES

The relatively weak correlations across CSWB emotions scores suggest that we should consider all emotional responses to an activity instead of relying on a single emotion gauge (happiness) for assessing whether mothers "like" child caregiving more than fathers. In the previous sections, we examined each emotion separately, for each activity. But the sheer volume of data makes it difficult to tell a unifying story about gender differences. To consolidate the CSWB findings and to handle the inherent ordinal nature of the data, Kahneman and Krueger (2006) and Krueger

et al. (2009) suggest calculating individual-level U-indices that aggregate information from multiple measures of emotions. Conceptually, the U-index approximates the percentage of time respondents are engaged in unpleasant activities. In order to construct the U-index, the research team must determine what methodology to follow to categorize an activity as pleasant or unpleasant. The researchers also must choose which emotions to include and whether to use averages or individual scores. Kahneman and Krueger's (2006) U-index, using the PATS data, defines an activity as unpleasant for a respondent if any of the respondent's negative emotion scores in that activity are higher (indicating a stronger emotion) than any of the respondent's positive emotion scores. We use the same approach with the 2010 ATUS data. Since it is not clear whether meaningfulness is truly an emotion parallel to the others, we calculate two sets of U-indices: one with happiness and meaningfulness as two positive emotions, and the other with happiness as the single positive emotion.[23] We include all four negative emotions – sadness, tiredness, stress and pain – in each calculation, as they each seem to be important negative characteristics of an activity.[24]

An example is offered to explain the construction of the unpleasantness indicator for an individual engaged in a given activity. Consider a father who is asked how he felt during an hour when he reported playing with his child. Assume he reported the following CSWB scores: happiness = 4, sadness = 0, stress = 1, pain = 0, and tiredness = 5, along with a meaningfulness score of 6. Because his highest negative CSWB score is a 5 (for tiredness), while his highest positive score is a 4 (happiness), this activity is characterized as unpleasant in the index that excludes meaningfulness. However, if meaningfulness is included, the activity is characterized as pleasant.

The construction of the unpleasantness indicator addresses concerns with individual differences in scoring (that is, some individuals are "low scorers" while others are "high scorers"). Additionally, the U-index would be preferred if one group (say, mothers) is systematically more emotive than another group, reporting that they are both happier and sadder, more tired and more stressed. For example, a mother could report that during the episode of TV watching she felt 5 on the happiness scale and 6 on the tiredness scale. A father watching television might report that he was 3 on the happiness scale and 4 on the tiredness scale. With these scores, the activity is recorded as unpleasant for both respondents, since for each of them the tiredness score was larger than the happiness score. In this way, the unpleasantness indicator alleviates some of the problem of analyzing ordinal rankings by making a within-person comparison of scores instead of across-person comparisons.

Once an activity is defined as unpleasant for the individual, we calculate the percent of each activity that are characterized as unpleasant, separately for mothers and fathers, and present those calculations in Table 4. Columns

Table 4 Percentage of individuals who rate the activity as unpleasant

	Meaningfulness not included as a positive emotion		*Meaningfulness included as a positive emotion*		*Percentage point decline from including meaningfulness*	
	Fathers	*Mothers*	*Fathers*	*Mothers*	*Fathers*	*Mothers*
Average activity-level percentage unpleasant						
Physical care of children	16.3%	21.6%	5.5%	5.2%	10.8	16.4
Playing with children	6.3%	4.0%	1.2%	0.1%	5.0	3.8
Talking with children	4.9%	26.8%	4.1%	6.6%	0.8	20.2
Picking up or dropping off children	13.1%	33.4%	5.8%	18.4%	7.3	15.0
Rest of caring for children	6.1%	13.2%	1.9%	5.9%	4.3	7.3
Education-related child caregiving	13.0%	23.7%	2.1%	6.7%	10.9	16.9
Interior cleaning	51.0%	22.9%	31.7%	16.0%	19.2	6.9
Food prep	9.0%	21.5%	4.4%	10.4%	4.6	11.1
Kitchen cleanup	19.2%	44.3%	13.0%	30.9%	6.2	13.4
Financial management	16.1%	65.4%	7.8%	29.7%	8.3	35.7

(*Continued*)

Table 4 Continued.

	Meaningfulness not included as a positive emotion		*Meaningfulness included as a positive emotion*		*Percentage point decline from including meaningfulness*	
	Fathers	*Mothers*	*Fathers*	*Mothers*	*Fathers*	*Mothers*
Working main job	32.5%	31.2%	16.3%	15.5%	16.3	15.7
Grocery shopping	48.1%	27.5%	41.2%	13.3%	6.9	14.2
Shopping not groceries	13.4%	11.9%	7.8%	4.6%	5.6	7.3
Eating/drinking	16.1%	16.1%	8.9%	10.2%	7.2	5.9
Socializing with others	18.4%	26.9%	6.2%	6.2%	12.2	20.7
Relaxing/doing nothing alone	14.7%	48.0%	10.5%	26.5%	4.2	21.5
Watching TV	20.7%	31.3%	16.6%	23.2%	4.1	8.0
Rest of relaxing and leisure	19.3%	23.3%	10.9%	16.2%	8.4	7.2
All of participating in sports, exercise and recreation	7.2%	9.7%	0.8%	0.6%	6.4	9.1

Notes: All samples are restricted to those mothers and fathers who had some minutes of own household child caregiving during their diary day. CSWB questions are only asked of respondents who participated in that activity. Average activity-level percentage unpleasant is the percentage of the individuals who rated that activity as unpleasant in that their highest negative emotion score is higher than the highest positive emotion score. Percentages are weighted by the activity level weights supplied by BLS. Sample sizes are the same as reported in Tables 1 and 2.

1 and 2 present the proportion of the activity that is unpleasant when meaningfulness is not included as a positive emotion. Columns 3 and 4 present the proportion of the activity that is unpleasant when both happiness and meaningfulness are included as positive emotions. As we saw in Table 2 Panel A, the scores for meaningfulness tend to be very high for all activities. The generally higher values of meaningfulness result in the percentages unpleasant shown in columns 3 and 4 being lower than in columns 1 and 2. Columns 5 and 6 show the percentage point decline in the average resulting from the addition of meaningfulness. It is interesting to note that the effect of including meaningfulness differs substantially across time-use activities and between mothers and fathers. Overall, the differences in columns 5 and 6 are larger for mothers than fathers, indicating that mothers are more likely to attribute high levels of meaningfulness to activities that they otherwise find unpleasant.

Overall, Table 4 shows that, in most activities, a larger percent of mothers characterize the activity as unpleasant compared to fathers. Focusing on the child caregiving activities, 22 percent of mothers characterized their episode of the physical care of children as unpleasant (without meaningfulness included) compared to 16 percent of fathers. Similarly, large differences are found among all of the other child caregiving categories except playing with children, for which almost the same percentage of mothers and fathers (4 versus 6 percent) provided scores that characterized the episode as unpleasant. These findings, which consolidate the five (or six) emotions by activity, provide further evidence that mothers do not "like" childcare more than fathers.

The activity-level unpleasantness percentages presented in Table 4 reflect the summary statistics of an intermediate step in the calculation of the individual level U-index. To construct the individual-level U-index, first the unpleasantness dummy for each person who was asked the CSWB questions is multiplied by his or her individual duration spent in that activity, so that unpleasantness is weighted by duration of the activity. These duration-weighted unpleasantness indicators are then averaged over all individuals with a CSWB score for that activity. The result is the duration-weighted average percent unpleasantness scores per activity, which Kahneman and Krueger call activity-level U-indices. The activity-level U-indices are then combined with an individual respondent's actual daily time use in all included activities (not just the three CSWB queried activities) to calculate a person-level U-index, which is interpretable as the percentage of the individual's total time that is unpleasant. This construction assumes that all individuals face a common assessment of unpleasantness by activities, but differ in how they use their time. In most of the analyses presented in Alan Krueger (2007), he assumes that men and women share common activity-level U-indices and differ only in their time use allocation. Based on our analysis presented in Table 4 along with the earlier tables, it is clear

that men and women do not share common assessment of unpleasantness; thus, we calculate the activity-level U-indices separately by gender and individual-level U-indices that differ both in the gendered assessment of unpleasantness and in gendered differences in time use.

Table 5 presents two sets of average person-level U-indices calculated separately by gender. Row 1 reports the average person-level U-indices incorporating all nineteen included activities. Row 2 reports average person-level U-indices for the six child caregiving activities; the U-indices in this row reflect the average percentage of child caregiving time that mothers and fathers report as unpleasant. Both rows 1 and 2 reveal statistically significant gender differences, with mothers reporting a greater proportions of their time as unpleasant. Fathers report time spent in child caregiving is unpleasant about 10 percent of the time, while mothers report that their child caregiving is unpleasant nineteen percent of the time. Note that these findings are consistent with Krueger et al.'s (2009) calculation from the PATS data of 15.2 percent, which was calculated without stratifying by gender.

Rows 3 and 4 present the same U-index comparison, but with meaningfulness included as a positive CSWB measure. As we saw in Table 4, including meaningfulness reduces the percentage of time that is characterized as unpleasant. Nonetheless, mothers find 8 percent of their time in child caregiving unpleasant, compared to 2 percent for men. Overall, survey respondents consider childcare activities to be quite pleasant, as the average person-level U-index for all nineteen included activities as reported in row 1 is 23 percent for fathers and 25 percent for women, excluding meaningfulness.

Lastly, we perform a simulation exercise that extends Kahneman and Krueger's U-index methodology to produce a "gender counterfactual" that allows us to disentangle the source of the overall U-indices' gender difference into two components: the portion attributable to differences in time use and the portion attributable to differences in CSWB scores.[25] Results for these counterfactuals are shown in the latter columns of Table 5 and in Supplemental Table 2, available online on the publisher's website. The results vary slightly depending on which group is used as the reference group (that is, which gender's actual time use is used as the base). Table 5 shows the counterfactual of fathers if they used their time the way mothers do but retain their own gender's average activity level U-indices.[26] The results of this simulation provide evidence that the gender differences in the average person-level U-indices reported above are the result of mothers' stronger negative emotions in most activities, rather than because mothers devote more time to inherently unpleasant activities. In fact, if fathers used their time the way mothers used theirs, fathers would be slightly better off, as their average person-level U-index would be 20.9 instead of 22.5 and their child caregiving only person-level U-index would

Table 5 Actual and counterfactual average individual-level percentage unpleasant using mothers' time distribution as the base

	1	*2*	*3*	*4*	*5*	*6*	*7*
	Fathers' U-index	*Mothers' U-index*	*Sig. diff.?*	*Counterfactual U-index for fathers if they used their time like mothers*	*Actual gender gap in U-indices (fathers minus mothers) col 1–col 2*	*Gender gap attributable to gendered activity level U-index col 4–col 2*	*Percentage of gender-gap in actual U-index attributable to differences in gendered activity-level U-indices col 6–col 5*
U-index excluding meaningfulness							
All 19 included activities	22.5%	24.6%	***	20.9%	−2.1%	−3.7%	175.3%
All 6 included child caregiving activities	9.9%	18.8%	***	10.0%	−8.9%	−8.8%	99.1%
U-index including meaningfulness							
All 19 included activities	13.6%	13.7%		12.7%	−0.1%	−1.0%	724.8%
All 6 included child caregiving activities	2.4%	8.2%	***	2.5%	−5.8%	−5.6%	97.0%
Number of individual respondents	1,115	2,180					

Notes: A person-level U-index is calculated for each mother and father in the sample using gender-specific average activity-level U-indices and the sample respondents' full distribution of time use in the included activities. The average of the person-level U-indices presented is a weighted average using individual-level weights provided by BLS. Significance tests are based on reestimating the averages 160 times using alternative weights provided by the BLS for this purpose and then doing a simple *t*-test of the means of the 160 average U-indices for mothers and fathers; ***, **, * denote statistical significance at the 1, 5, and 10 percent levels, respectively.

be essentially unchanged, 10.0 instead of 9.9. Thus, more than 100 percent of the gender gap in the average person-level U-indices is attributable to gender differences in the activity-level U-indices, and close to 100 percent for the child caregiving U-index gender gap. These counterfactuals allow us to conclude that, even controlling for differences in how women and men use their time, mothers find child caregiving to be unpleasant more often than fathers.

CONCLUDING REMARKS

The 2010 ATUS data, which provides time-diary data along with self-reported measures of CSWB for a large, nationally representative sample of the US population, offer new insights into variations in CSWB across activities and individuals. Researchers have suggested a variety of uses for these data, including a new type of national time accounting (Krueger et al. 2009). Our use of the data is less global, but we believe, equally important, as it provides empirical evidence to test the hypothesis that mothers "like" child caregiving time more than fathers, with the unstated corollary that differences in preferences help explain why mothers, even mothers in couples in which both spouses hold full-time paid jobs, still do the majority of child caregiving. Policymakers have an interest in understanding this persistent gender difference because of the established link between unpaid work in the home and average labor market earnings (Hersch 2009). Additionally, recent research has shown that both fathers and mothers report concerns with balancing work and family, suggesting that this topic is no longer purely a "women's issue" (Kim Parker and Wendy Wang 2013).

Our research provides evidence that both mothers and fathers "like" child caregiving in the sense that they report higher happiness scores while engaged in child caregiving than in other daily activities. Mothers and fathers are also quite similar in the high level of meaningfulness they attribute to their time spent in child caregiving. Mothers and father differ more in the tiredness and stress they report while engaged in child caregiving overall. Mothers report statistically significantly higher stress scores and higher tiredness scores while engaged in the physical care of children and higher tiredness scores when picking up or dropping off. More generally, mothers have higher average tiredness scores in almost every activity, including the aggregated child caregiving category. Similarly, women report statistically significantly higher stress scores in the aggregated childcare activity category than men, once we control for the duration in the activity.

When we extend our analysis of caregiving to consider a broadened definition of caregiving (to include activities engaged in with children present), we find little difference in our initial findings. However, our

analysis of gender differences in the CSWB of activities that include "secondary childcare" was limited to the few large time-use categories with enough observations. Nonetheless, given the similarity of the CSWB scores for mothers with and without children present (here we were able to analyze seven of the thirteen non-child caregiving activities), we feel comfortable that the basic conclusions of this paper will not change as more data become available.

One of the challenges that researchers face with the new ATUS CSWB data is that there is so much information: five (or six) emotions, many activities. We calculate two summary measures of overall well-being, the average percent unpleasant by activity and average person-level U-indices, to develop a more unified story. By comparing the average person-level U-indices of mothers and fathers, we find that child caregiving activities are more often unpleasant for mothers, with a substantial difference of 9 percentage points.[27]

The analysis in this paper provides strong evidence to counter the popular notion that mothers perform more unpaid work in the home, particularly activities related to caring for their own children because they enjoy these activities more than fathers. Unfortunately, we are no closer to answering the broader question of *why* mothers perform substantially more of the child caregiving (and housework) than fathers. One potential explanation lies in our incomplete measurement of total well-being; perhaps mothers experience greater total well-being for those endeavors, but we are unable to capture this experience completely with CSWB measures that just capture process utility. Alternatively, mothers may be (real or perceived) more productive caregivers, or they may be the logical choice in a heterosexual couple given lower wages and labor market discrimination, particularly at higher managerial levels, that women (and mothers, in particular) still face. Certainly, gender-role inertia and habit also play a role. These other explanations are better tested with other data. The contribution of this research is to eliminate from the potential list of explanations the assertion that mothers simply "like" child caregiving more than fathers.

Finally, this research, by delving more deeply into the specifics of the CSWB of individuals in the United States, serves to enlighten discussions concerning happiness, a popular national-media subject for generations. Most recently, the cover of *TIME* magazine (July 8, 2013) highlighted the "pursuit of happiness," and Senior's (2014) new book examines the effect that children have on their parents' happiness. Based on our findings, researchers looking at happiness or, more broadly, at CSWB, must consider carefully the complex, interrelated roles played by parenthood and gender.

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NOTES

[1] This article was published three days later in the *New York Times* magazine with the title, "Diaper Changing Index" (March 25, 2012, p. 16).

[2] Specifically, the research was based on a survey of 184 academic couples with at least one child under the age 2, all on the tenure track at universities. Additionally, the authors discuss concerns with potential respondent bias inherent in the survey instrument design.

[3] See, for example, Camille Ryan and Julie Siebens (2012) and Judith McDonald and Robert Thornton (2007).

[4] Also see Joni Hersch and Leslie Stratton (1997) and Mark Bryan and Almudena Sevilla-Sanz (2011).

[5] The U-index is drawn from Daniel Kahneman and Alan Krueger's (2006) work with similar data.

[6] See Almudena Sevilla, José Gimenez-Nadal, and Jonathan Gershuny (2012) for a similar comparison of RSWB and CSWB measures.

[7] F. Thomas Juster, Paul Courant, and Gregory Dow define process benefits as the

> direct subjective consequences from engaging in some activities to the exclusion of others ... For instance, how much an individual likes or dislikes the activity 'painting one's house,' in conjunction with the amount of time one spends in painting the house, is as important determinant of well-being independent of how satisfied one feels about having a freshly painted house.

For a presentation of an underlying theoretical model of utility, see Alan Krueger (1985: 120–1), Daniel Kahneman, David Schkade, Norbert Schwarz, and Arthur Stone (2009).

[8] Alexander Szalai (1972), the pioneer of time-diary research, also experimented with collecting CSWB information together with yesterday's time diary.

[9] "Positive" was the emotion included in the PATS and excluded from the ATUS. The ATUS added questions about the meaningfulness of the activity not found in the PATS.

[10] José I. Gimenez-Nadal and Almudena Sevilla-Sanz (2011) consider the effect of gender and parenting on "leisure satisfaction." Leisure satisfaction is somewhat different from GRSWB measures, as it comes from a question in the European Community Household Panel (ECHP) that asks "How satisfied are you with the amount of leisure time you have?" Thus, it is a measure of satisfaction with the amount of time one has to devote to leisure, rather than a measure of the satisfaction one gets out of the specific leisure activities in which one is engaged. Gimenez-Nadal and Sevilla-Sanz find that mothers of children 0 to 17 years of age have lower levels of satisfaction with the amount of leisure time they have compared with fathers of children the same age (as seen in the statistical significance of the coefficient of the interaction between number of children and the female indicator variable).

[11] Bertrand (2013) does not include tiredness as a negative emotion. Since tiredness is high for mothers, including tiredness would be expected to change some of her findings.

[12] Wang (2013) writes that women find more meaning in child caregiving too, but this difference is very small and unlikely to be statistically significant.

[13] The ATUS also has a series of questions about "whether children were in your care" during the activity. These questions are asked after the time-diary data collection is completely finished. The interviewer returns to each activity reported and asks if, during that activity, there was a child under age 13 in your care. These responses to these questions are often called secondary child caregiving and were designed as a compromise between survey length and the desire to measure multitasking. However, previous research has shown that the secondary child caregiving questions in the ATUS produce much higher estimates of secondary child-caregiving time than surveys that allow all two uses of time at any moment (Suzanne Bianchi, Vanessa Wight, and Sara Raley 2005; Kimberly Fisher 2005) because some parents report that every activity that takes place at home when a young child is present in the home is an activity in which a child is under one's care. This is, of course, technically true, and gets at the problem of measuring child-caregiving time articulated so well by Nancy Folbre, Jayoung Yoon,

Kade Finnoff, and Allison Fuligni (2005) and Nancy Folbre and Jayoung Yoon (2008). But given the comparative estimates of Bianchi, Wight, and Raley (2005) and Fisher (2005), we believe the alternative measure of "was there a child in the room during the activity?" is most likely to affect CSWB.

[14] Because of lower response rates by men than women and the sample selection criterion that one must report at least one child-caregiving activity on diary day, our analysis sample comprises 33.8 percent men and 66.2 percent women. However, all results reported in the paper are weighted using BLS supplied weights to return the sample to the population proportions. The differential in sample inclusion rates of men versus women may lead to the concern that the fathers included in the analysis sample are self-selected to be those who enjoy child caregiving differently than mothers. This would be the case if fathers are allowed to opt out of child caregiving and mothers are not. It is difficult to think of how to "fix" this problem, since one cannot ask about experienced emotion for an activity that has not happened. What we can do is acknowledge that all reported emotions are conditional on having engaged in that activity the previous day, plus that the entire sample of fathers (and mothers) is selected on the criterion that they engaged in child caregiving minutes the previous day.

[15] We include an activity if there are thirty or more CSWB responses for both mothers and fathers. See the Data Appendix for further detail on how the activities were chosen for inclusion.

[16] In Connelly and Kimmel (forthcoming), developmental caregiving time includes time spent reading to children, helping with homework, playing with children, talking and listening to children, and school conferences. Maintenance child caregiving includes physical care of children, organization and planning related to children, attending children's events, watching children, waiting for children, and providing food and obtaining medical care for children.

[17] See Gigi Foster and Charlene Kalenkoski (2012) for an experiment in multitasking. The child caregiving task in their experiment involved enough down time that respondents could also do the laundry task productively at the same time. However, in the experiment by Thomas Buser and Noemi Peter (2012), both tasks were problem-solving intensive; thus, the productivity advantage went to solo-tasking as compared to multitasking.

[18] Daniel Hamermesh and Jungmin Lee (2007) note that women report a greater sense of feeling rushed, and this gender difference may be the result of women changing activities more often throughout the diary day.

[19] Marie Connolly (2013) describes the relationship between weather and reported well-being, thus suggesting the importance of controlling the diary month in our regression.

[20] The full regression results (84 separate regressions; 21 activities × 4 emotions) are available from the authors upon request.

[21] The parallel results for the remaining two emotions, sadness and pain, are available from the authors. These scores are much lower overall and few gender differences are observed.

[22] Mothers' tiredness is also not simply a function of getting less sleep. In fact, the mothers in our sample report thirty minutes more sleep on their diary day than fathers (a statistically significant difference).

[23] Tie scores go to pleasant; that is, for an activity to be characterized as unpleasant the highest negative score must be strictly greater than the highest positive score.

[24] Bertrand (2013) excludes tiredness from her measure of an unpleasant activity. In addition, the U-index she calculates is very different from Kahneman and Krueger's, as it is based on just the three activities that each individual was asked about and she does not control for different probabilities of being asked about a specific activity based on differences in time use. Kahneman and Krueger's U-index (and ours) is based on average emotion scores by activity (averaged over all people in the relevant sample) and individual time-use proportions for all waking activities of the day (not just the three for which CSWB questions were asked).

[25] This is analogous to the Oaxaca–Blinder decomposition of the wage gap, which decomposes differences attributable to composition effects from behavioral effects. The composition effects in this case as differences in how time is used, while the behavioral effect is how unpleasant activities are judged.

[26] The counterfactual for mothers if they used their time the ways that fathers use their time is shown in Supplemental Table 2, available online on the publisher's website.

[27] Krueger (2007) compares the size of gender gaps he calculates (based on non-gendered activity level U-indices) to the size of the gap between weekday and weekend U-indices. The weekend/weekday gap he reports is about 3 percentage points, making a 9 percentage point gap quite large indeed.

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ATUS DATA APPENDIX

1. Selection and construction of the nineteen included activities:

The 2010 ATUS included 476 different possible time-use activities that are categorized into seventeen "2-digit" categories; and within each "2-digit" category there are subcategories called "4-digit" categories and then further subcategories called "6-digit" categories. In all, there are twenty-one "6-digit" categories related to child caregiving of children living in the household (excluding all transportation

categories). However, many of these categories seldom occur. We only include an activity if there are at least twenty CSWB scores in each of the mothers' and fathers' sample. When a "6-digit" activity did not pass this threshold, we combined it with other similar activities (within the same "4-digit" classification) and created a "4-digit residual" activity. Again, we subjected that "4-digit residual" to the thirty observation rule for inclusion. Six child caregiving activities pass the "test" and are included in our analysis. Of these, four are "6-digit" activities: the "physical care of children," "playing with children," "talking with children," and "picking up or dropping off children." The other two are "4-digit residual" categories: "rest of caring for children," and all of "education-related child caergiving." To compare child-caregiving activities to other time-use activities, we used the same inclusion rule. In all, we have nineteen activities (excluding transportation categories), which are either "6-digit" activities or "4-digit residual" activities.

2. Identification of mothers and fathers based on co-residence of own household children:

The ATUS differentiates between own household children, own non-household children, and non-own household children and non-own non-household children. If a woman lives with her 10 year old, then she has an own household child, and we call her a mother. If her 16-year-old son lives with her ex-husband, then the respondent also has an own non-household child. If she shares the house with her 20-year-old daughter (not a child) and her 2-year-old grandchild, then the respondent also has a non-own household child present. And if she spent the afternoon babysitting for her 5-year-old niece, she was engaged in child caregiving for a non-own non-household child during that time. Child caregiving activities are coded separately for care of household children and non-household children (activities coded 300000s versus 400000s). Our analysis focuses only on the child caregiving for household children (300000s), and we limit the sample to men and women who have own children present – that is, mothers and fathers. Thus, the vast majority of the child caregiving time we are analyzing is care provided by mothers and fathers of their own co-residing children; the woman in the example above is a mother by our definition but could be reporting on time spent caring for the grandchild who lives with her. We have not included the care of non-household children, as we expect those time-use activities to elicit different CSWB responses than caregiving of household children, and the incidents are too few to analyze separately.