Does parenthood influence how men and women spend their time? Evidence from four societies.

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Introduction. Every society observes a division of labor by gender. How men and women spend their time is further influenced by such factors as age, marital status, and parental status. While time allocation patterns have been fairly well studied in industrialized nations such as the United States, less is known about how parenthood influences men's and women's time use in subsistence ecologies, in which food production rather than wage labor forms the bulk of the economy. Studies in industrialized economies suggest that men with children spend more time in paid labor and less time in social or leisure activities than men without children, while women with children are more likely to reduce engagement in economic activities while increasing their time spent in household activities and childcare, relative to women without children (e.g., Bianchi et al. 2006, Bost et al. 2002, Jacobs and Gerson 2004, Milkie et al. 2004). Are these patterns universal, and do they hold for the nonindustrialized, pre-demographic transition conditions under which humans have lived for most of our history? We shall address these questions in this paper.

Methods. Data were collected from 14 separate indigenous subsistence-level societies in the 1970s and 1980s, using observational focal follow data collection methods (Johnson and Johnson 1988). In brief, individuals were followed during daylight hours, with their activities being noted every 30 minutes. The data are publically available through the Human Relations Area Files (HRAF). Four of societies from the available data are included in the current study; these were selected on the basis of having robust sample size, few missing observations, reliable demographic data, etc. The final sample for analysis is restricted to individuals ages 15 and older. These are coded as having children if they have a co-resident biological child ages birth through 14. Non-resident children, adopted or foster children, and adult children are not counted in this variable. Table 1 summarizes the characteristics of each society in the sample, including the sample size. The sample includes over 27,000 observations on 516 individuals. Because each individual contributes multiple observations to the dataset (on average, 52), conventional statistical tests are inappropriate. We will analyze the probability of an observation being a particular type of behavior using random effects complementary log-log models in STATA, thereby controlling for multiple observations per individual. Analyses also control for the individual's age (in years) and cultural affiliation.

The time allocation data used 63 distinct activity codes, collapsed into 8 main categories:

1. Commercial activities: production of money or trade goods, including wage labor
2. Eating: food consumption
3. Food production: agriculture, hunting, gathering, etc.
4. Food preparation: cooking or processing food
5. Housework: tidying and cleaning

6. Individual activities: non-social individual activities (sleeping, idleness, hygiene, etc.)
7. Manufacturing: making and repairing things
8. Social exchanges: activities involving more than one person (chatting, childcare, etc.)

The current analysis will focus on these 8 main categories, modeling the probability that an observed time unit is engaged in each of the 8 activities (e.g., an individual observed at time x was engaged in food production, etc.).

Results. Table 2 summarizes daytime activity patterns for men and women in the sample. Relative to women, men spend relatively more of their day engaged in commercial activities, food production, manufacturing, and social exchanges, and relatively less in food preparation and housework; men and women spend similar amounts of time engaged in eating or non-social individual behaviors.

Table 3 presents multivariate models of each of the 8 time allocation categories in the data, specifically examining whether parenthood (operationalized as the presence or absence of any children) predicts engagement in specific time activities. Fathers are more likely than men who are not fathers to engage in commercial activities, including wage labor, and are less likely to engage in social activities. For most activities, fatherhood does not influence how men spend their time. Among women, mothers are more likely than non-mothers to engage in commercial activities, food production, and food preparation, and less likely to engage in manufacturing activities or social exchanges.

Conclusion. Consistent with patterns observed in industrialized economies, fathers in the sample exhibit increased economic activity (commercial behaviors but not food production) and fewer social interactions. Also consistent with industrialized patterns, mothers in the sample spend more time on food preparation and less time on social activities. However, in contrast to industrialized patterns, mothers are more likely to engage in economic activities (commercial activities and food production) than non-mothers. This may possibly be due to the presence of closely related substitute caregivers, such as grandmothers, as well as the greater compatibility of women's economic productive work with childcare in these ecologies. That is, a woman may be more likely either to find a relative to care for her child while she works, or she may be able to take her children with her while working, in subsistence economies than industrialized settings. Further work examining the time allocation subcategories, as well as the complementarity of time allocation between husbands and wives, may clarify these relationships.

References:

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Table 1. Summary statistics for each of the four societies included in the sample

	Men			**Women**		
	Num. of individuals	*Num. of observations*	*Any children*	*Num. of individuals*	*Num. of observations*	*Any children*
Efe	16	2,484	0.105	23	2,176	0.317
Kipsigis	162	5,759	0.618	192	11,217	0.800
Madurese	31	1,584	0.700	43	2,138	0.554
Machiguenga	18	568	0.806	31	1,084	0.667

Table 2. Mean time spent in each activity category, by gender

	Men		**Women**	
	Avg.	*Std. dev.*	*Avg.*	*Std. dev.*
Commercial activities	0.142	0.349	0.061	0.240
Eating	0.043	0.202	0.042	0.200
Food production	0.249	0.432	0.196	0.397
Food preparation	0.014	0.119	0.197	0.398
Housework	0.010	0.102	0.093	0.290
Individual	0.155	0.362	0.124	0.330
Manufacturing	0.103	0.304	0.051	0.221
Social exchanges	0.279	0.449	0.231	0.421

Table 3. Random effects complementary log-log models of time allocation

A. Men	**Commercial activities**		**Eating**		**Food production**		**Food preparation**		**Housework**		**Individual activities**		**Manufacturing**		**Social exchanges**	
	Coef.	*p*	*Coef.*	*p*	*Coef.*	*p*	*Coef.*	*p*	*Coef.*	*p*	*Coef.*	*p*	*Coef.*	*p*	*Coef.*	*p*
Intercept	-2.912	***	-3.248	***	-1.412	***	-4.587	***	-5.128	***	-3.543	***	-2.491	***	-0.400	***
Age	0.004		0.003		-0.006	+	0.002		-0.011		0.013	**	0.002		-0.003	
Kipsigis (baseline)	—		—		—		—		—		—		—		—	
Efe	-2.421	***	0.247	+	0.766	***	0.467		0.488		2.269	***	0.111		-2.134	***
Madurese	0.752	**	-1.158	***	0.349	**	0.137		1.783	***	1.576	***	-0.863	***	-1.580	***
Machiguenga	-2.538	***	0.969	***	0.641	***	0.354		0.941	*	1.628	***	0.587	**	-1.425	***
Any children	0.910	***	-0.111		-0.051		-0.187		0.171		-0.120		0.077		-0.227	*
Wald chi-sq	116.99		70.17		44.51		5.53		41.71		307.48		33.63		354.52	
p	0.000		0.000		0.000		0.3551		0.000		0.000		0.000		0.000	

B. Women	**Commercial activities**		**Eating**		**Food production**		**Food preparation**		**Housework**		**Individual activities**		**Manufacturing**		**Social exchanges**	
	Coef.	*p*	*Coef.*	*p*	*Coef.*	*p*	*Coef.*	*p*	*Coef.*	*p*	*Coef.*	*p*	*Coef.*	*p*	*Coef.*	*p*
Intercept	-3.761	***	-3.433	***	-1.703	***	-1.877	***	-1.939	***	-3.195	***	-3.146	***	-0.678	***
Age	0.008	+	0.007	*	0.001		0.005	**	-0.009	**	0.006	+	0.004		-0.009	***
Kipsigis (baseline)	—		—		—		—		—		—		—		—	
Efe	0.410	+	0.508	***	-0.921	***	-0.206	*	-0.923	***	2.300	***	0.397	**	-1.303	***
Madurese	0.563	**	-1.544	***	0.175	*	0.151	*	-0.666	***	1.522	***	-1.754	***	-1.051	***
Machiguenga	-2.918	***	0.692	***	-0.433	***	-0.163		-0.971	***	1.500	***	1.571	***	-0.592	***
Any children	0.366	*	-0.047		0.241	**	0.212	***	0.055		-0.091		-0.239	*	-0.199	**
Wald chi-sq	42.31		87.65		100.31		40.27		119.75		591.47		270.67		187.42	
p	0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000	

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$