

Specialization in Household Activities
within Cohabiting versus Married Households

By

Leslie S. Stratton*
Associate Professor
Virginia Commonwealth University
Visiting Professor
Aarhus School of Business
IZA, Bonn

Draft Dated: April 2004

* Visiting Professor, Department of Economics, Aarhus School of Business, Prismet, 2 Silkeborgvej, 8000 Aarhus C, Denmark. lsstratt@vcu.edu.

Support from a 2002 Faculty Excellence Award from Virginia Commonwealth University's School of Business is gratefully acknowledged. The author also wishes to thank Joni Hersch, Jens Bonke, and seminar participants at VCU, the Aarhus School of Business, and the Center for Applied Economics in Copenhagen for their comments on earlier versions of the paper.

Specialization in Household Activities

Within Cohabiting versus Married Households

Abstract:

The purpose of this paper is to use information on couples' time allocation to housework to examine how household structure and characteristics effect specialization. A simple model is presented in which the degree of specialization is a function of the expected duration of the relationship. This model predicts that the shorter the expected duration, the less specialization will arise. Cohabiting relationships are of shorter duration than marriages in the United States. This suggests that cohabiting households will specialize less than married households. Data on household time use from the National Survey of Families and Households are presented to provide evidence of household specialization as a whole and to test whether specialization is greater within married versus cohabiting households. Differences in home ownership, parental status, employment status, and age are observed between cohabiting and married households and such differences do influence the observed degree of specialization. Results indicate that on average cohabiting households engage in less intrahousehold specialization than married households, but this differential is primarily attributable to the shorter length of cohabiting relationships rather than to the type of relationship per se.

Specialization in Household Activities Within Cohabiting versus Married Households

Many economic decisions are made at the level of the household, among these numerous decisions regarding the allocation of time. Yet the nature of households has changed considerably over the last three decades in the United States. Marriage rates have fallen while cohabitation and divorce rates have risen. If intrahousehold decision making is sensitive to the nature and perceived stability of the household structure, then cohabiting and married couples are likely to make different choices. This paper looks at reported time spent on housework within couple households to see if there are distinct differences in the rate of intrahousehold specialization by type of household. The purpose of this paper is twofold: first to document the remarkable degree of intrahousehold specialization in housework both as a whole and in its individual components, and second to compare the degree to which specialization differs between cohabiting and married households and, more generally, with the duration of the relationship.

The data used in this analysis come from the 1992-4 wave of the National Survey of Families and Households (NSFH). This survey provides detailed personal and household information, complete marital histories, and nearly complete cohabitation histories for a sample of United States residents. Of particular interest here is the availability of information on nine different types of housework activities collected for individuals and their spouses/partners. It is this information we use to examine intrahousehold specialization.

The analysis proceeds as follows. A brief background and literature survey is followed by the presentation of a simple model of specialization. This model predicts that households

with a longer expected duration will optimally choose to specialize more than households with a shorter expected duration. This leads to the prediction that married households will specialize more than cohabiting households in the U.S.. Following a more in-depth description of the data, the degree of specialization is examined by calculating the fraction of household time the male partner contributes to housework as a whole and to each of the nine types of housework activities for which data are available. Both means and frequencies provide substantial evidence of intrahousehold specialization. A single, summary, time-weighted measure of specialization is then constructed for every household. This index provides evidence that married households are more specialized than cohabiting households, but may be biased due to other differences between such households in terms of home ownership, parental status, age, and employment status. To take account of such differences, difference indices are constructed and multivariate analysis is conducted. Results from both approaches provide support for the prediction of the model that cohabiting households engage in less intrahousehold specialization than married households, but this differential is primarily attributable to the shorter length of cohabiting relationships rather than to the type of relationship per se.

Background & Literature Review

Household composition has changed considerably in the last thirty years in the United States. The fraction of married couple households fell from 70% in 1970 to 52% in 2002. This decline is attributable in part to delayed marriages, in part to reduced marriage rates, and in part to rising divorce rates. The median age at first marriage for women rose from 20.8 in 1970 to 25.3 in 2002. Marriage rates declined over this period from 10.6 to 8.4 per 1000 persons. Divorce rates meanwhile rose from about 2.5 in the mid 1960s to a peak of 5.3 around 1980, and

have since declined somewhat to a level of about 4.0 per 1000 persons. These statistics suggest that couple households have become both less common and more unstable.

The first point is, however, contestable. While the incidence of marriage declined between 1970 and 2002, the incidence of cohabitation increased significantly. Conservative numbers indicate that the fraction of cohabiting partners rose from 0.8% to 4.5% of all households between 1970 and 2002. Both Bumpass, Sweet, and Cherlin (1991) and Michaels (2003) report that the fraction of couple households has remained approximately level over time within cohorts – with the declining fraction of married couples being largely offset by increasing cohabitation rates.

Couple households are generally perceived as having an advantage over single person households in home production because couples can take advantage of both economies of scale and specialization. Economies of scale arise because it typically takes less than twice as long to make a meal for two as it does to make two separate single serving meals. Specialization within a household occurs when members divide up tasks and individually allocate their time to only a subset of activities, rather than dividing their time more evenly across all tasks. The ‘traditional’ two-person household with one wage earner and one housekeeper is an extreme case of specialization by activity. There are, of course, many different types of housework, and specialization can also arise in the type of housework performed. If individuals concentrate on performing those tasks for which they are relatively better suited, for which they have a lower opportunity cost, and let others perform the tasks for which they are relatively better suited, then the household will benefit from higher consumption levels. Specialization even in less skill intensive tasks can benefit households if there are any setup costs or if there are even small learning-by-doing benefits.

The benefits of specialization persist independent of the nature of the household decision process. Whether household members act together to maximize a joint household utility function or separately to maximize their own individual utility functions, there are incentives to specialize. While the amount of specialization may be less than that which is socially optimal in some bargaining models (see Lundberg 2002 and Wells and Maher 1996 for a discussion of the problems of unenforceable intertemporal contracts), some specialization still takes place.

While all couples households can benefit from specialization, however, the costs associated with specialization must also be considered. If there is any cost associated with changing one's activities, the degree of intrahousehold specialization will become a function of the expected duration of the relationship. The longer the time horizon over which gains can be enjoyed, the greater will be the expected degree of specialization. It is for this reason that the nature of couple households may influence the degree of intrahousehold specialization. It rarely makes sense for unrelated roommates to engage in much specialization. There may also be differences between married and cohabiting couples.

While cohabiting households are a heterogeneous population, there is evidence that they are on average different from married households¹, particularly in terms of the expected duration of their relationship. Even though marriages are less stable today than they were thirty years ago, cohabiting relationships are less stable still (Bumpass and Sweet 1989 and Vital and Health Statistics 2002). The probability that a cohabiting relationship will end within its first year is seven times as high as the probability that a marriage will end within its first year. This differential declines over time, but is still twice as high within cohabiting relationships as

¹ See Forste (2001) and Willis and Michael (1994) for a discussion of why couples cohabit rather than marry, Schoen and Weinick (1993) for evidence that cohabiting partners are different from married partners, and Winkler (1997) for evidence that most but not all cohabiting households appear to handle income differently than married households.

compared to married households ten years into the relationship. There is even evidence that couples who cohabit before marriage have less stable marriages than those who do not (Bumpass and Sweet 1989, Brines and Joyner 1999). In general, the perception is that cohabitators are substantially more uncertain about their relationship than married couples (Bumpass, Sweet, and Cherlin 1991).

If cohabiting couples are less certain about their relationship, they may be less likely to specialize than married couples. Of course, the level of certainty is difficult to ascertain and every relationship is unique. Thus, in addition to controlling for the type of relationship, we will control for other factors related to marital and cohabitation duration. Variables such as race, age at the onset of the relationship, education, residence, religiosity, and family background have all been found to influence marital stability (Brines and Joyner 1999). Clearly the experienced duration of the relationship may also be related to the expected total duration of the relationship. After controlling for these other factors, married couples may not specialize any more than cohabiting couples.

Empirical evidence on specialization is limited. The fact that labor force participation rates are higher for married men than for unmarried men and lower for married women than for unmarried women can be taken as token evidence of specialization. Information on home production activities is more difficult to obtain. Much of this analysis relies on cross section analysis of time spent on housework by married versus single persons. Such analysis is, of course, complicated by the heterogeneous nature of housework. Housework is comprised of many different tasks. Intrahousehold specialization may lead men to increase the time they spend in some types of housework while decreasing the time they spend in others. Also important are changing household needs. The demand for household services changes

substantially with home ownership and parental status. Differences between single, married, and cohabiting households in home ownership and parental status are significant. It is important to try to distinguish between differences in the allocation of housework time that are attributable to changing needs and those attributable to changing household status.

Shelton and John (1993) and South and Spitze (1994) find that married women spend significantly more time on housework than cohabiting women who in turn spend more time than unmarried women even after controlling for differences in work hours, education, race, age, household composition, and earnings. However, they report little variation in reported housework time for men by household type, even after controlling for other lifecycle factors. This may be attributable in part to the aggregate measure of housework used. Both South and Spitze (1994) and Hersch and Stratton (2000) report that the type of tasks men perform varies by household type. Unmarried men spend substantially more time cooking and cleaning than married men, while married men spend substantially more time on outdoor chores than never married men. None of this analysis, however, pays much attention to the actions of the other spouse.

The empirical work addressing intrahousehold time allocation derives primarily from the bargaining literature. The dependent variable in these analyses (as, for example, in Hersch and Stratton 1994) is typically the fraction of total household time spent on housework that is contributed by the man in the household.² This is modeled as a function of ‘power’ variables representing the fraction of income the man contributes to the household and of time availability controlling somehow for hours employed. Extensions in the sociology literature have looked for

² One exception is Kurdek (1993) who compares the allocation of female-type household labor among gay, lesbian, and heterosexual married couples without children. He finds that gay and lesbian couples are more likely to engage in specialization, but gay and lesbian couples share this housework as a whole more evenly than married couples.

nonlinear gender differences. A concern here is that women who are significant bread earners may begin to do a growing share of the housework in order to ‘do gender’ (Bittman et al 2003). An underlying assumption of these papers is that housework is basically undesirable and the partner who has the least power (the lowest earnings potential) does more of the housework.

The notion of household specialization envisioned in this paper, however, is gender neutral. The man may specialize in some activities, the woman in others. The point is that the degree of specialization may differ with the expected duration of the relationship. We know of no previous attempts to measure specialization in this way.

Theory

The purpose of this section of the paper is to demonstrate how the expected duration of a household relationship is likely to influence the optimal amount of specialization within that household. Let’s assume that specialization is determined at the time households are formed. Let VS stand for the present value of net benefits accruing to specialization. VS will be a function of the degree of specialization (S) and the expected duration of the relationship (D): $VS(S,D)$.

The benefits to specialization are the increased household/individual utility generated by specialization according to comparative advantage. The more specialized a couple is, the greater will be the benefits and the longer the duration of the relationship, the greater will be the benefits. The costs to specialization are twofold. Up front there are some primarily fixed costs associated with changing schedules and possibly with learning skills to accommodate the reallocated tasks. At the conclusion of the relationship there are additional fixed costs to ‘unspecialize’ as well as possibly greater costs to relearn tasks that have been forgotten. These

costs are incurred so long as any specialization is undertaken: the greater the change, the greater the cost. The greater the expected duration of the relationship, however, the lower the cost will be, as the presented discounted cost associated with unspecializing is discounted further.

Figure 1 illustrates VS as a function of the degree of specialization, holding the expected duration of the relationship constant. VS is downward sloping because the first 'units' of specialization undertaken will be those that offer the greatest benefits net of costs. VS is illustrated such that the benefits attributable to the first units are very high and decline relatively rapidly. This is likely if some of the first household tasks require skills that one partner has already acquired or if one partner enjoys an activity such that he/she derives benefits from engaging in the activity even if the relationship is of a very limited duration. Here S^* , where the net benefits are zero, is the optimal degree of specialization. The net benefits from specialization in a relationship with a longer expected duration are illustrated in Figure 2. Such an increase raises VS at all levels of specialization and hence increases the optimal degree of specialization to S' .

Data

We use data from the National Survey of Families and Households (NSFH) to examine the allocation of housework time.³ The National Survey of Families and Households (NSFH) consists of a national sample of 13,007 households interviewed in 1987-88, of whom 10,005 were reinterviewed in 1992-94. We focus on data obtained during the second wave as there were significant problems with the reported housework measures from the first wave.⁴ Restricting the

³ See Sweet, Bumpass, and Call (1996) for further details on this survey.

⁴ 5.5% of the 10,005 first wave respondents also interviewed in the second wave, failed to provide any information on own housework time as compared with only 1.6% of second wave respondents. In addition, 23.5% of the first wave sample, as compared with 8.1% of the second

sample to those cohabiting and married persons no older than age 60 at the time of the second interview, not currently enrolled full-time in school, and not in the military, reduces our sample size to 4863.⁵ These restrictions are imposed so as to make the set of competing time uses more homogeneous across households, by excluding education, military service, and retirement from the set of observed time uses. Cohabiting and recently married couples were over sampled by the NSFH. While this ensures large sample sizes, all the estimates presented below are weighted to adjust for this over sampling⁶.

Of key importance for this study, each respondent to the NSFH is asked to self-report the approximate number of hours spent per week by both themselves and their spouse/partner on nine different housework activities: meal preparation (“meal preparation”); washing dishes and cleaning up after meals (“dishes”); house cleaning (“cleaning”); washing, ironing and mending (“laundry”); shopping for groceries and other household goods (“shopping”); outdoor and other household maintenance tasks (“outdoor maintenance”); auto maintenance and repair (“auto repair”); paying bills and keeping other financial records (“paying bills”); and driving other household members to work, school, or other activities (“driving others”). Spouses/partners complete an identical questionnaire.

wave sample, failed to report at least one measure of housework time. Missing reports were particularly prevalent for outdoor maintenance and auto repair activities on which many persons reported spending no time. Correspondence with NSFH staff suggests that many respondents may have left blanks rather than filled in zeros at the time of the first wave interview. However, interviewers were instructed to check for this problem during the second wave. Most researchers using the first wave data (Hersch and Stratton 2000, South and Spitze 1994) assume at least some of these values are zero. By using the second wave data, we reduce the possible error in variables bias introduced by such assumptions.

⁵ Also excluded were 36 couples missing age, education, household composition, or home ownership information.

⁶ An analysis of time spent doing housework using the unweighted data reveals substantially the same pattern of time allocation.

In order to compare the allocation of housework between married and cohabiting couples, reasonable information on each of the nine reported housework activities must be reported for each partner. We rely upon either the primary respondent or the partner to report the complete set of household housework data. Information from different sources is not mixed, as different individuals may have a different sense of time. When any component of either own or partner time is either missing or unreasonable⁷, we exclude the observation.

A remarkably small fraction of our sample lacks complete information on housework. Information on the primary respondent's housework time is available in all but 228 or just under 5% of the cases. Restricting the sample to those couples for whom information is available on both partners, eliminates an additional 116 couples. In total 4519 couples have a complete record of housework time as reported by at least one person. As reported housework time has been observed to be dependent upon the gender of the respondent at least for this data source (Winkler 2002), we further split this sample into those households for which a man reports on the housework time of both adults and those households for which a woman reports on the housework time of both adults. As 2929 households provide complete records for both partners, there are 3655 households with reports from a man and 3793 households with reports from a woman.

These selection restrictions favor married couples over cohabiting couples. The fraction of cohabiting couples declines from 9.6% (in the sample that does not include housework information) to 9.1% when housework reports are required from at least one household member to 8.2% (8.6%) when housework reports are required from a man (woman). The latter decline is attributable to the lower response rate cohabiting partners as compared to married partners have

⁷ We deem any report suggesting that an individual spent more than 84 hours a week on housework as unreasonable.

to the survey as a whole. It seems reasonable to suppose that couples who are experiencing troubles within their relationship are more likely to fail to report. To the extent that this selection acts to eliminate more cohabitators and to make those cohabitators still in the sample more nearly resemble married persons, this selection mechanism will make it more difficult to observe differences between married and cohabiting households.⁸

Reported Housework Time by Gender and Marital Status

We begin our analysis by looking at reported time spent on housework by gender and marital status, to replicate South and Spitze's (1994) descriptive analysis of the first wave data. These second wave data are far cleaner than the first wave data used by South and Spitze, yet our results are quite similar. We focus our discussion here on the sample of married and cohabiting persons, but full results (including never married living independently, never married living with parents, divorced/separated, and widowed) are available from the author upon request. Figures 3A and 3B illustrate sample mean housework time separately by marital status and gender as reported by Men and Women respectively. The height of the bar indicates the total time spent. This time is further disaggregated by type of housework. The housework activities "meal preparation", "dishes", "cleaning", "laundry", and "shopping" are aggregated here and called 'female type' housework; "outdoor maintenance" and "auto repair" are aggregated and called 'male type' housework; and "paying bills" and "driving others" are aggregated and called 'neutral type' housework – as categorized by South and Spitze (1994).⁹ Essentially, this aggregation recognizes that women report spending more time on some types of housework, men

⁸ This sample selection bias is reduced somewhat when we further restrict the sample to couples where both partners are working full-time. In this case there are 1669 reports from a man and 1744 reports from a woman with 8.5% and 8.9% cohabiting respectively.

⁹ Some researchers have included "shopping" in the 'neutral' category.

report spending more time on others, and there appears to be a roughly equal division of time for the 'neutral type' activities.

A comparison of panels A and B reveals some differences in reported housework time depending upon the gender of the person reporting. Panel A provides the data as reported by men; panel B provides the data as reported by women. Men report spending about three more hours per week on housework, than their partners report them spending (18 versus 15 hours per week). This difference is statistically significant for both married and cohabiting men, and is attributable primarily to differences in reported time spent on 'female type' housework.¹⁰ There are no substantial or significant gender reported differences in sample average housework time for women. These results are similar to those reported in Winkler (2002).

Regardless of who reports, there is little variation in reported total housework time for men by household type. The key difference by household type for men is in the type of housework performed. Married men devote a much smaller share of their housework time to 'female type' housework (49-51%) compared to independent (72%), divorced/separated (67%), and widowed (67%) men, but much more on 'male type' housework (34-35% versus 18 to 24%). The difference between married and cohabiting men in this regard is not substantial. Cohabiting men report spending 56-59% of their time on 'female type' housework and 26-29% on 'male type' housework.

Women, on the other hand, report spending substantially more time on housework when they are married (33 hours per week) than when they are single (20), with other women falling in between - cohabiting shown here at 28-29 hours per week. On average women spend more time

¹⁰ The results are similar when the sample is restricted to those 2929 couples with complete reports on housework time from both partners, except that the greater reported housework time

on housework than men no matter their household type and more of this time on ‘female type’ housework. There is little difference in the manner in which housework time is allocated by cohabiting and married women, however, with both devoting between 83 and 85% of their housework time to ‘female type’ tasks.

A comparison of cohabiting and married persons at this level of detail reveals relatively few differences. While on average cohabiting men do not spend significantly more time than married men on housework tasks, they do spend more time on ‘female type’ housework and less time on ‘male type’ housework. Conversely, married women spend more time than cohabiting women, but allocate that time similarly. These data provide some evidence that married men specialize more by type of housework than cohabiting men, and that married women spend more time on housework than cohabiting women. On net, marriage does not appear to have a tremendous effect on housework time¹¹. However, these averages fail to capture specialization within the household as they do not control for the activities of the other partner/spouse. We address this issue now by looking at the intrahousehold distribution of housework.

Men’s Share of Housework

To document the extent of specialization within households, we examine the total share of couple housework time contributed by the man of the household. The results of this analysis are reported in Table 1. Panel A is based on housework time as reported by men; Panel B is based on housework time as reported by women. Men universally report that they contribute a

on ‘male type’ activities is also significant. Thus, the difference is not attributable to nonoverlapping sample differences.

¹¹ A better measure of household productivity would measure output. Unfortunately the only measure available is the time input. Total time spent on housework may be greater for married couples, even if there is specialization according to comparative advantage, if the demand for housework increases with marriage.

greater share of housework time than their partners' report them contributing. Thus, married men report contributing 36.3% of all household housework time while their spouses' report them contributing only 31.4%. The comparable figures for cohabiting men are 40.1% (as self-reported) and 34.1% (as reported by their partners). This makes sense if the reported time on housework by men but not women is greater as reported by men. To simplify the discussion below, we focus on the men's reports first and conclude by mentioning how these results differ qualitatively from the women's reports.¹²

If there were no specialization at all, housework were homogeneous, and every individual were equally productive at housework, each partner in a household would contribute 50% of the household time on housework. Results in column 1 indicate that on average married men contribute 36.3% of total housework time while cohabiting men contribute 40.2%. These shares are significantly different from 50% and as such provide evidence of specialization within both married and cohabiting households. These measures are also significantly different from each other (see t-statistic for difference in means at the bottom of the page), providing evidence that cohabiting households specialize somewhat less than married households.

A key problem with this comparison is that there are many different types of housework (housework is not homogeneous as assumed above) and there may be specialization by type. If men specialize in some activities, then use of the aggregated housework time measure will understate the degree of specialization within households. As the NSFH gathers data on time spent upon nine different types of housework, we are able to break this aggregate figure down. These results are summarized in the next nine columns of Table 1.

¹² Again, the results for the sample of 2929 couples with complete reports for both partners are similar, indicating that the reported differences by respondent gender are not attributable to different samples.

The first five columns report the share of time spent by men on the five ‘female type’ housework activities. As expected given the gender typing, men are reported contributing a somewhat smaller fraction of total housework time to these activities than to housework as a whole. While the share of time spent by married men on all housework is around 36%, their share of these female type housework activities is between 17 and 32%. On average cohabiting men also report contributing a smaller share of time to each of these activities as compared to their share of total housework time, but in each case they report a larger contribution than do married men. In four of five cases, this difference between married and cohabiting households is statistically significant at the 1% level.

By contrast, men’s reported share of time spent on “outdoor maintenance” and “auto repair” activities, the ‘male type’ housework, is substantially larger than their share of all housework, at between 75 and 94%. There is little difference between married and cohabiting men in this regard. Finally, as implied by the designation ‘neutral type’ housework, time spent “driving others” and “paying bills” is more evenly divided between partners, with men contributing between 42 and 50% of total household time in these categories.

While this analysis by housework type reveals more specialization in married couple households, the analysis of sample averages still may understate specialization. If women specialize in activity X in half the households and men specialize in activity X in the other half of households, then on average one might find that 50% of time was contributed by men. To examine this issue, we provide information in Table 1 on the frequency of the share distribution. Figures in column 1 indicate that in about 15% of married couples (0.69+14.04), one spouse contributes between 80 and 100% of the total time spent on housework by the couple. By

comparison, only about 9% (1.63+7.45) of cohabiting couples specialize so completely. Only 3% of either married or cohabiting households claim an even 50/50 split on time.

Looking in the same way at the nine individual housework components, we find that intrahousehold specialization is more substantial, particularly in married couple households, than is suggested by the means alone. 47% of married households report that one spouse does at least 80% of the cleaning, and 59% report that one spouse does all the laundry. Comparable specialization rates for cohabiting households are 37% and 46%. A larger share of cohabiting households also report an even time split of the female type tasks with 32% sharing shopping as compared with only 24% of married households. Indeed shopping is the ‘female type’ activity that appears to be least specialized. This is not surprising given that shopping can consist of food shopping, clothing shopping, shopping for children, or shopping for home or auto repair items, and there may be specialization depending upon the item being purchased. An analysis of the share distribution for ‘male type’ housework shows the substantial specialization demonstrated in the averages, particularly for “auto repair”. “Outdoor maintenance” activities – perhaps because they encompass such diverse activities as gardening and home repair activities – are, however, a shared activity in a surprisingly large fraction of households.

Analysis of the share frequency distribution is of particular value when looking at ‘neutral type’ housework activities. Although on average men report contributing a 42-50% share of time spent “driving others”, between 59 and 73% of couple households report complete specialization in this activity. Likewise, while men contribute about 45 to 47% of household time to “paying bills”, between 41 and 57% of couple households report complete specialization in this activity. The critical difference is that there is substantial heterogeneity in the gender of the person engaging in these activities. These results demonstrate the importance of analyzing

the sample distribution as well as the sample average when seeking to measure the degree of specialization. These detailed share data document far more specialization, even by cohabiting couples, than was evident looking only at mean reported housework time.

An analysis of Table 1, Panel B reveals much the same findings. Though the share of housework contributed by men is universally smaller, there still appears to be more specialization within married than within cohabiting households. Nowhere is this more evident than in an analysis of the distribution of housework time. Men are much more likely to report contributing between 30 and 69% of total housework time on all but the ‘male type’ housework. Where women report married men contributing a 30-69% share of all housework time in 49% of all households (47.59+1.71), men report contributing a 30-69% share of total housework time in 63% of all married households. The comparable figures are 56% and 71% for cohabiting households. Men are much more likely to report that time is split almost evenly.

Further consideration of these disaggregated housework measures raises some questions about comparability across households. “Shopping” and “outdoor maintenance” likely aggregate several heterogeneous activities and this aggregation may mask underlying gender differences. “Auto repair” is an almost exclusively male dominated activity that may depend far more upon preferences and perhaps skills than upon intrahousehold time allocation decisions. Certainly there are ample alternatives to self-servicing one’s car and over 20% of these couple households report spending no time at all on “car repair”. Of course, extending this argument one could say that “meal preparation” is a hobby for some. “Outdoor maintenance” and “driving others” are activities that are highly associated with home ownership, car ownership, and parental status, characteristics more often associated with married couples than cohabiting couples. Amongst cohabiting households, 28% own a home, 52% have coresident children, and 80% own a car.

Amongst married households, 81% own a home, 71% have coresident children, and 97% own a car. These differences between cohabiting and married couples can also be seen in the number of couple households reporting no time spent on “outdoor maintenance” and “driving others” (as well as “car repair”). Fully 25% (43%) of cohabiting couples but only 6% (31%) of married couples report no time on “outdoor maintenance” (“driving others”). The similar distribution of “outdoor maintenance” and “driving others” activities between married and cohabiting couples may be due to the fact that cohabiting couples who report spending some time on “outdoor maintenance” and “driving others” may resemble married couples more closely than do other cohabiting couples.

The Specialization Index

The analysis above highlights the dangers of using aggregated measures of housework or even gender-typed measures to gauge specialization. Here a single, simple, weighted alternative is proposed. This measure sums up the maximum time spent between partners on each of the nine types of housework activities and divides this by the total time spent by both partners on all nine activities. The result is a time-weighted index of specialization (SI). We further adjust this measure so that it falls between zero and one – where zero represents an even division of time between partners and one represents complete specialization by activity.¹³ This measure is constructed for each household and its mean value compared between married and cohabiting

¹³ The precise equation used to calculate this index is as follows:

$$\text{SI} = \text{Specialization Index} = \left[\frac{\sum_{i=1}^9 \text{Max}(HW_i^M, HW_i^F)}{\sum_{i=1}^9 (HW_i^M + HW_i^F)} - 0.5 \right] \times 2$$

couples. A significantly higher specialization index for married versus cohabiting households would support the theoretical prediction that married couples specialize more than cohabiting couples. This index provides a simple means of conducting this test while simultaneously recognizing that housework is a heterogeneous activity, the individual components of which can exhibit differential specialization by gender and even by household.

There are a number of concerns associated with this measure of specialization. Two are rather technical. For mathematical reasons, holding constant the number of activities, this index will tend to be higher the fewer the hours spent on housework. Similarly, holding constant the number of hours spent on housework, this measure will tend to be higher the greater the number of activities. If spending time on a greater variety of activities is indicative of a more heterogeneous set of activities, then specialization may also be correlated with the number of activities because there are more opportunities for gains from specialization. Statistics indicate that married households spend about 10% more time on housework than cohabiting households. Part of this is attributable to differential reporting on the number of activities. Although the NSFH provides information on nine different activities for all persons, about half of all married couples report spending time on each of the nine activities but only about one-third of the cohabiting couples do so. The fraction of cohabiting couples reporting any time spent on “outdoor maintenance” or “driving others” is much smaller than the fraction of married couples. Both the differential in total housework time and in number of housework activities may be attributable to the lower probability with which cohabiting households have coresident children, the lower probability with which cohabiting households own homes, or some other difference between cohabiting and married households. We control for this difference in two ways. First,

where HW_i^j represents time spent on housework activity i by partner j (M for male, F for

we construct measures of specialization for couples with and without children (SI_C and SI_{NC}) and couples who own and do not own homes (SI_H and SI_{NH}). Second, in our multivariate analysis, we control for total time spent on housework, the number of different household activities, the presence of children, home ownership, and residence in a single family dwelling.

Differences may also arise because the specialization measure used here is input not output based and may be influenced by the level of effort exerted on housework. As individuals become more time constrained, they may exert more effort or otherwise use their time more efficiently to accomplish the same tasks in smaller amounts of time. Of particular concern in this regard is the employment status of each partner. If individuals who are not employed report (or are reported as) spending substantially more time on housework than they would if they were employed and completing the same tasks, then the specialization index may be biased if couples have different time constraints. To control for such time constraints, we calculate the specialization index separately for households in which both partners work full-time (SI_{2E}) and for households in which both partners do not (SI_{0E}). In our regression analysis, we take this a step further and restrict the analysis to the sample of couples in which both partners work full-time.

The amount of specialization that arises within a household may also be sensitive to the skill level required to complete a task or to the level of satisfaction that each household member receives from the task. Tasks that are acquired only with a substantial time investment are more likely to be allocated based on the skill level of the household members and less likely to be sensitive to the expected duration of the relationship. Likewise, tasks that are perceived as enjoyable, as hobbies, will be allocated more according to the preferences of the household members and so will be less sensitive to the expected duration of the relationship. One could

female).

argue that auto repair, cooking, and outdoor maintenance require more skills and are more likely to be viewed as hobbies, than dishes, cleaning, laundry, bill paying, driving others, or shopping for groceries and other household goods. Whether the relationship is expected to endure for 10 years or for 1 year, a couple is likely to allocate any auto repair activities primarily based on each partners' expertise or preferences for the work. Doing dishes, however, requires little skill and the degree of specialization in this activity may be more sensitive to the expected duration of the relationship. For this reason, we calculate the index separately for the subset of more mundane household tasks (SI_M) and perform regression analysis using this index measure as well.

Social norms may also influence the allocation of household tasks. These may differ with the age, education level, family background, race, or place of residence of the householders. Cohabiting couples are, on average, over 6 years younger than married couples within the sample, have acquired almost 1 less year of education, are more likely not to have lived with both parents till the age of 14, are more likely to be black, are less likely to live in the South and more likely to live in the West (see Appendix A for sample means by household type). In addition, we have information on each partner's belief about whether men should spend as much time on housework as their partner when their partner is employed full-time. This question does not directly address specialization in housework but does address time allocation more generally. Some of the observed difference in specialization between married and cohabiting couples could be norm related, and multivariate analysis will allow us to control for such differences.

Of particular interest in this analysis is the impact of the expected duration of the relationship. In part, this will be captured by the distinction between cohabiting and married couples. Because married couples are more likely to have a higher expected duration, married couples should be observed specializing more. By controlling directly for expected duration,

however, we could determine if cohabiting couples behave differently from married couples for reasons other than differences in the expected duration of the relationship. If we had a panel data set, we could use information on completed durations to estimate total duration and use this measure in our analysis. Having only cross-section data, we use current duration as our best available approximation. To the extent that the expected total duration matches the actual total duration, current duration will understate expected total duration and the estimated coefficient to our duration measure will be biased away from zero. However, current duration is likely to be a particularly poor measure for those in recently established relationships: some of these relationships will be short lived, but some could last for decades. Finite life spans limit the bias for those in relationships established long ago. This will lead the coefficient to current duration to be biased toward zero.¹⁴ The net bias is unclear, but should not reverse the sign of the coefficient. It is of some note that the mean duration of the current relationship in our sample is about four times as long for married couples as for cohabiting couples.¹⁵ In further analysis, we also control for other factors believed to be related to marital and cohabitation duration, such as family background and religious preferences.

Table 2 reports the means and distributions of the calculated specialization indices separately by marital status. Figures at the top are reported by men and figures at the bottom are reported by women. The mean index values are all significantly different from 0 and significantly different from 1, indicating that both married and cohabiting households specialize,

¹⁴ If specialization is a function of the length of a relationship, then our specialization index measure should have greater variance across newly coupled households than across households that were formed years ago. In fact, the standard deviation of the index for couples married less than five years is similar to that for couples married over 10 years. It is perhaps indicative of the heterogeneity of the cohabiting couples that the standard deviation in the index measure for these couples is higher than that for married couples.

¹⁵ Note that we sum time spent cohabiting and married with a spouse to obtain the measure of time married. Thus, this is actually time spent in the relationship.

but not completely. The value is somewhat lower when only the less skilled, more mundane household tasks are considered (SI_M versus SI_A). Specialization in these activities may be less evident in the data as couples may do these tasks on alternate days and so appear to spend similar amounts of time per week. By contrast, there is evidence of greater specialization in households with children than in childless households (SI_C versus SI_{NC}), in households owning a home than in households not owning a home (SI_H versus SI_{NH}), and in households where both partners do not work full-time than in households where both work full-time (SI_{OE} versus SI_{2E}). A comparison of the index values by marital status indicates that there is more specialization by married couples, as measured by each of these index values, and most of these differences are statistically significant at the 5% level, using a one-sided test. The only exceptions are for households with children (as reported by both men and women)¹⁶ and households owning a home (as reported by women).

Regression Analysis

While a comparison of this specialization index across different household types is informative and suggests that married couples specialize more in housework than cohabiting couples, the evidence is not yet conclusive. Sensitivity testing of the index provides further support for our hypothesis, but only regression analysis will allow us to control for many household characteristics simultaneously. As all decisions regarding time use are clearly interrelated, hours of employment will be endogenously determined with specialization. As it is problematic to identify suitable instruments to control for this endogeneity, we choose to restrict

¹⁶ Households with children must also allocate time to child care. Information on time spent on child care is not available in the NSFH. There may be substantial specialization in childcare that requires a reallocation of housework tasks and time. This housework-alone measure of specialization may not be sufficient to capture the actual degree of intrahousehold specialization.

our regression analysis to the sample of couples that are both working full-time. For this sample we estimate two-limit Tobit specifications in recognition of the limited range of the specialization index. While only a handful of individuals of either gender report an equal division of labor (an index value of zero), 140 women in this sample report complete specialization (an index value of one).

Of particular interest in this analysis is the impact of marital status and of the duration of the relationship. All specifications also include variables derived directly from our concern about the robustness of the specialization index to the amount and variety of housework performed and to social norms. These include variables to identify the total time spent on housework and the number of different housework activities on which time is spent; dummy variables for home ownership and residence in a single family dwelling; dummy variables identifying households with a resident child and with more than one resident child; and variables reflecting the male partner's age and the difference between his age and hers. Also included (but not reported in the table) are dummy variables identifying households with preschool age and pre-teenage children¹⁷, the race of the survey respondent, the education level of the male partner and the difference between his and his partner's education¹⁸; controls for region of residence (Midwest, South, West versus Northeast) and residence in an SMSA. The first specification (1) controls only for marital status, the second adds controls for the duration of the current relationship (2). The third specification (3) controls as well for other factors likely related to the expected duration of the relationship and for the couple's philosophy regarding the allocation of

¹⁷ Alternative specifications incorporating the number of children of various ages were estimated, but did not significantly improve the fit of the model.

¹⁸ Some evidence suggests that more educated men contribute more housework time and a greater share of the housework time, though the impact on specialization is less certain (Hersch and Stratton 1994). At least one partner reports education within our sample. We include dummy variables to identify those cases where a report is missing.

time to housework. Here we add dummy variables to identify religious preferences, family background, and each partner's response to the statement, "A husband whose wife is working full-time should spend just as many hours doing housework as his wife."

Results of this analysis are reported in Table 3 (full results available upon request). Panel A reports the results using the data reported by men; Panel B reports the results using the data reported by women. Generally speaking there appears to be a negative relation between specialization and both the total amount of time spent on housework and the number of different tasks for which time is reported. Home ownership and/or residence in a single family dwelling are associated with higher levels of specialization. Couples with children also appear to specialize more, all else constant. More educated male partners reduce the degree of specialization; while marriage to less educated female partners increases the degree of specialization. Race appears to be unrelated to the degree of specialization, and residence in an SMSA or in the Western portion of the United States is associated with decreased specialization.

Results from specification (1) suggest that after controlling for all these other factors, married couples engage in a more specialized division of household labor than cohabiting couples, but this difference is not statistically significant. The effect of the male partner's age in this specification is, however, positive and strongly significant and age is here strongly correlated with the duration of the relationship. Controlling for the duration of the current relationship, as in specification (2), the coefficient to age falls significantly and becomes statistically insignificant. Instead, each additional year in the relationship is associated with a statistically significant though small positive effect on specialization. Checking for a differential effect by household type, we find duration has a greater effect for cohabiting couples using the data reported by men, but a greater effect for married couples using the data reported by women.

In neither case is the difference statistically significant at the five percent level and so we report results only for the single duration measure.

These results persist in specification (3). Here too, married households appear to be insignificantly more specialized than cohabiting households, but specialization increases with the duration of the relationship. The additional controls added here suggest that couples perceptions of how time should be allocated are important. In households where partners report that husbands should spend as much time on housework as their partners if their partners are working full-time, there is significantly and substantially less intrahousehold specialization as measured by time spent per week. Controls for religious and family background were added because these variables are reported to be highly correlated with the duration of relationships. Family background is measured as a dummy variable that takes a value of one for those couples who both lived with their parents until the age of 14. Coming from such a traditional family background seems to increase specialization, but only significantly so when the men report on housework time. Religious background for the primary respondent was coded as a dummy identifying those who reported no particular religion. This appears to have a negative impact on specialization that is significant only when the women report on housework time.

Sensitivity testing was conducted along a number of different dimensions. Marital status was interacted with a number of the explanatory variables, but no consistent relation was observed. The duration of relationship was allowed to have a nonlinear effect, either through a quadratic in current duration or by separately identifying cohabitations lasting more than five years. Neither measure was statistically significant. A dummy variable identifying Catholics was tested as were measures of the woman's age at the start of the relationship and whether this were the first marriage for the primary respondent. Though some of these factors have been

associated with marital duration, none was found to have a consistently significant impact on specialization.

As a further test, similar analysis was performed on an index that excludes the three household tasks most likely to require skills and most likely to be considered pleasurable by some fraction of the population. The activities still considered in the index are Dishes, Cleaning, Laundry, Shopping, Driving Others, and Paying Bills. The measure of total time spent on housework and of the number of housework tasks reported are redefined for this set of six tasks. Results of this analysis are presented in Table 4.

For the most part, these results are similar to those reported in Table 3. It is of some interest, however, to note that the coefficient to Married is substantially greater in magnitude and hovering at least on the margin of statistical significance for all six specifications. The impact of duration is somewhat smaller here using the data reported by men, but still at least marginally statistically significant throughout. This may be evidence that cohabiting and married households make decisions differently, even after controlling for expected duration.

Overall, the conclusion appears to be that while married couples exhibit more intrahousehold specialization when it comes to allocating time to housework, most of this differential is attributable to other characteristics of the household that differ by marital status (such as the presence of children or home ownership). What difference remains appears to be attributable primarily to differences in the time partners have been together, though in the case of more mundane housework activities there is some evidence that household type might matter.

Conclusions

With marriage rates falling and cohabitation rates rising in the United States and around the world, differences between these two types of households have increasing importance within the economy. The observation that cohabiting relationships within the U.S. have a shorter mean duration than marriages (and, indeed, that marriages preceded by cohabitation are also shorter lived) suggests that there are fundamental differences between these two household types, at least within the U.S.. This paper examines the possibility that these differences may lead these different types of households to make different decisions.

The specific focus here is upon housework or home production activities. Basic economic theory suggests that specialization according to comparative advantage can benefit all parties and couple households should have an advantage of single households in that they are able to reap such benefits. The act of specializing can, however, be costly, and the cost will not be incurred if the expected future benefits are not sufficiently high. A simple model of specialization is presented to demonstrate that the degree of specialization within couple households will increase with the expected duration of the relationship. This model suggests that cohabiting households will engage in less specialization on average than married households in the U.S..

Time use data from the NSFH are used to test this prediction. Analysis of the fraction of household time contributed by the man in the household suggests there is substantial specialization in all couple households. Much of this evidence is obscured by the use of aggregate statistics and means. For example, while means suggest that men contribute almost half of all household time spent paying bills, in half of all households there is complete specialization in this activity. Sample means hide the fact that in half of all households women

do this task and in the other half men do this task. A single gender neutral index of specialization is constructed for each household that takes into account task and household specific behavior.

A comparison of this index between married and cohabiting households is complicated by the many other differences between married and cohabiting couples. Not only have married couples been together longer, but they are more likely to have children, to own their own homes, and to be older. Different measures of this index are constructed for households with different characteristics and for different sets of housework activities. In each case, these indices suggest there is substantial specialization in all households, but significantly more within married as compared to cohabiting households. The most all-inclusive such measure averages 0.581 for married couples and 0.515 for cohabiting couples as reported by men (0.634 and 0.584 as reported by women), indicating married couples specialize on average about 10% more than cohabiting couples.

Multivariate regression analysis is conducted on a sample of couples who both work full-time to simultaneously control for a wider variety of factors including the duration of the relationship. While it is clear from this analysis that a substantial fraction of the different specialization rate observed between married and cohabiting households is attributable to differences in home ownership, parental status, and the age and education levels of the partners, the specialization index is also found to be significantly positively correlated with the duration of the current relationship. Analysis of housework tasks that are less likely to be allocated based on skill or individuals preferences yields some evidence that not only the duration but perhaps also the type of relationship might matter for household decisions regarding housework. Future work should consider implementing better controls for the expected duration of the relationship and

for the possibility that the duration of the relationship is itself a function of the degree of intrahousehold specialization.

Overall, this analysis presents some evidence, both theoretical and empirical, that the degree of specialization is greater within households that have a longer expected duration. To the extent that rising cohabitation rates, falling marriage rates, and rising divorce rates suggest that individuals are entering less durable relationships, these results suggest that couples today are experiencing reduced gains from specialization. Only further analysis of production and productivity in the home sector as well as intrahousehold decision making can reveal the extent and nature of such losses.

Bibliography

Becker, Gary S. A Treatise on the Family. Cambridge, Mass.: Harvard University Press, 1981. Reprint, 1991.

Bittman, Michael, Paula England, Nancy Folbre, Liana Sayer, and George Matheson. "When Does Gender Trump Money? Bargaining and Time in Household Work." American Journal of Sociology, 109, No. 1 (July 2003), pp. 186-214.

Brines, Julie and Kara Joyner. "The Ties that Bind: Principles of Cohesion in Cohabitation and Marriage." American Sociological Review, 64, No. 3 (June 1999), pp. 333-355.

Bumpass, Larry L. and James A. Sweet. "National Estimates of Cohabitation." Demography, 26, No. 4 (November 1989), pp. 615-625.

Bumpass, Larry L., James A. Sweet, and Andrew Cherlin. "The Role of Cohabitation in Declining Rates of Marriage." Journal of Marriage and the Family, 53, No. 4 (November 1991), pp. 913-927.

Forste, Renata. "Prelude to Marriage or Alternative to Marriage? A Social Demographic Look at Cohabitation in the U.S." Mimeo. Brigham Young University. February 2001.

Hersch, Joni and Leslie S. Stratton. "Household Specialization and the Male Marital Wage Premium." Industrial and Labor Relations Review, 54, No. 1 (October 2000), pp. 78-94.

Hersch, Joni and Leslie S. Stratton. "Housework, Wages, and the Division of Housework Time for Employed Spouses." The American Economic Review, Papers and Proceedings, 84, No. 2 (May 1994), pp. 120-125.

Kurdek, Lawrence A. "The Allocation of Household Labor in Gay, Lesbian, and Heterosexual Married Couples." Journal of Social Issues, 49, No. 3 (1993), pp. 127-139.

Lundberg, Shelly. "Limits to Specialization: Efficiency and the Division of Labor in Modern Families." IZA Conference on "The Future of Family and Work." In Bonn, German. May 2002.

Michael, Robert T. "An Economic Perspective on Sex, Marriage and the Family in Contemporary United States." The Harris School, University of Chicago. Working Paper #2003-7 (July 2003).

National Center for Health Statistics. "Cohabitation, Married, Divorce, and Remarriage in the United States." Vital and Health Statistics, Series 23, Number 22 (July 2002).

Schoen, Robert and Robin M. Weinick. "Partner Choice in Marriages and Cohabitations." Journal of Marriage and the Family, 55, 2 (May 1993), pp. 408-414.

Shelton, Beth Anne and Daphne John. "Does Marital Status Make a Difference?" Journal of Family Issues, 14, No. 3 (September 1993), pp. 401-420.

South, Scott J. and Glenna Spitze. "Housework in Marital and Nonmarital Households." American Sociological Review, 59, 3 (June 1994), pp. 327-347.

Sweet, James A., and Larry L. Bumpass. The National Survey of Families and Households - Waves 1 and 2: Data Description and Documentation. Center for Demography and Ecology, University of Wisconsin-Madison (<http://ssc.wisc.edu/nsfh/home.htm>), 1996.

Wells, Robin and Maria Maher. "Time and Surplus Allocation Within Marriage." Mimeo dated February 1996.

Willis, Robert J. and Robert T. Michael. "Innovation in Family Formation: Evidence on Cohabitation in the United States." The Family, the Market and the State in Ageing Societies.

Eds. John Ermisch and Neohiro Ogawa. Oxford: Clarendon Press, 1994. pp. 9-45.

Winkler, Anne E. "Economic Decision-making by Cohabitators: Findings Regarding Income Pooling." Applied Economics, 29, No. 8 (August 1997), pp. 1079-1090.

Winkler, Anne E. "Measuring Time Use in Households with More than One Person." Monthly Labor Review, 125, No. 2 (February 2002), pp. 45-52.

Figure 1

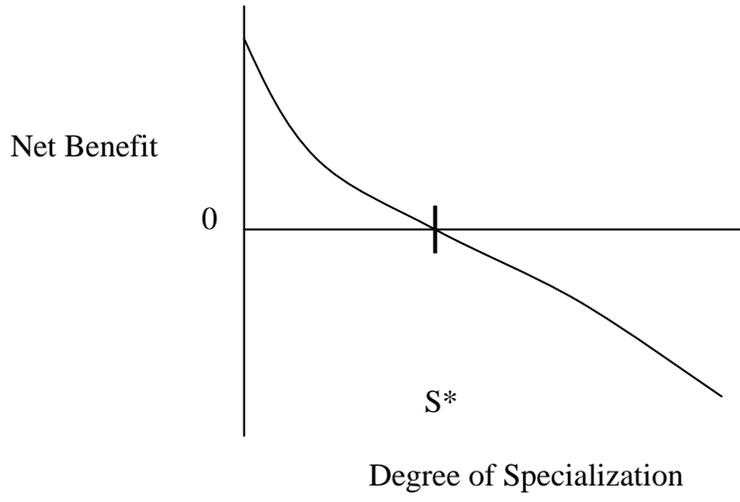


Figure 2

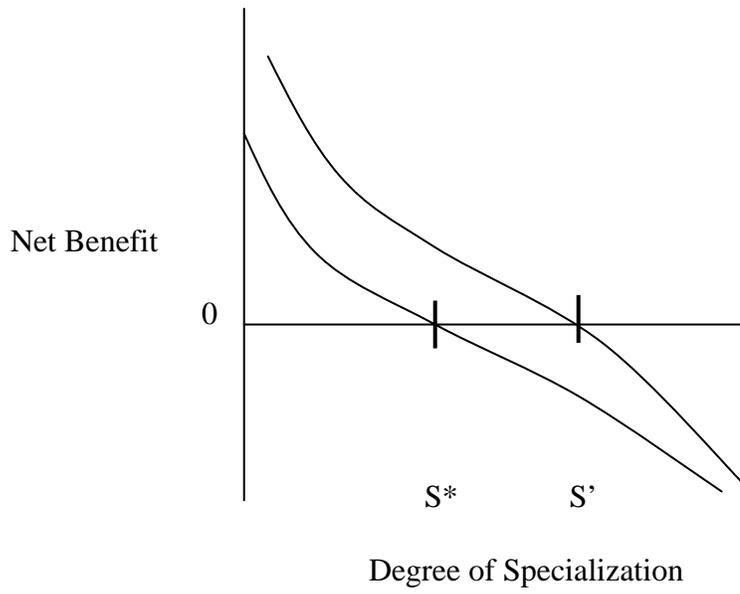
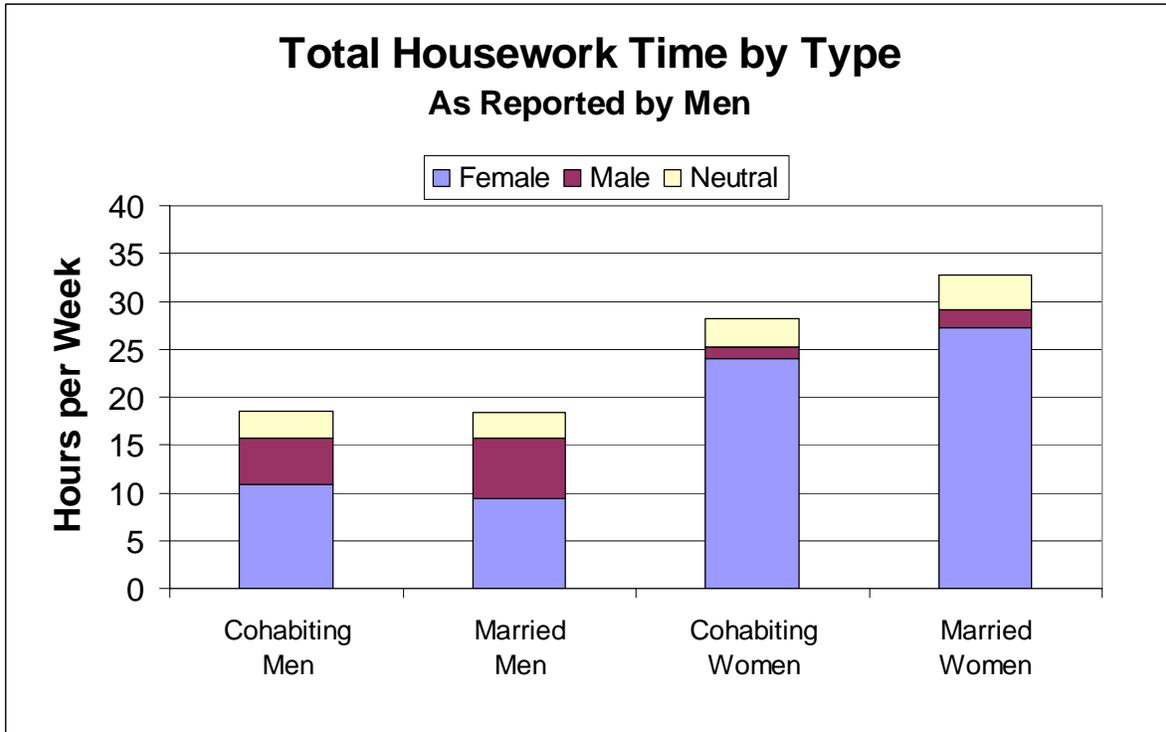


Figure 3

Panel A



Panel B

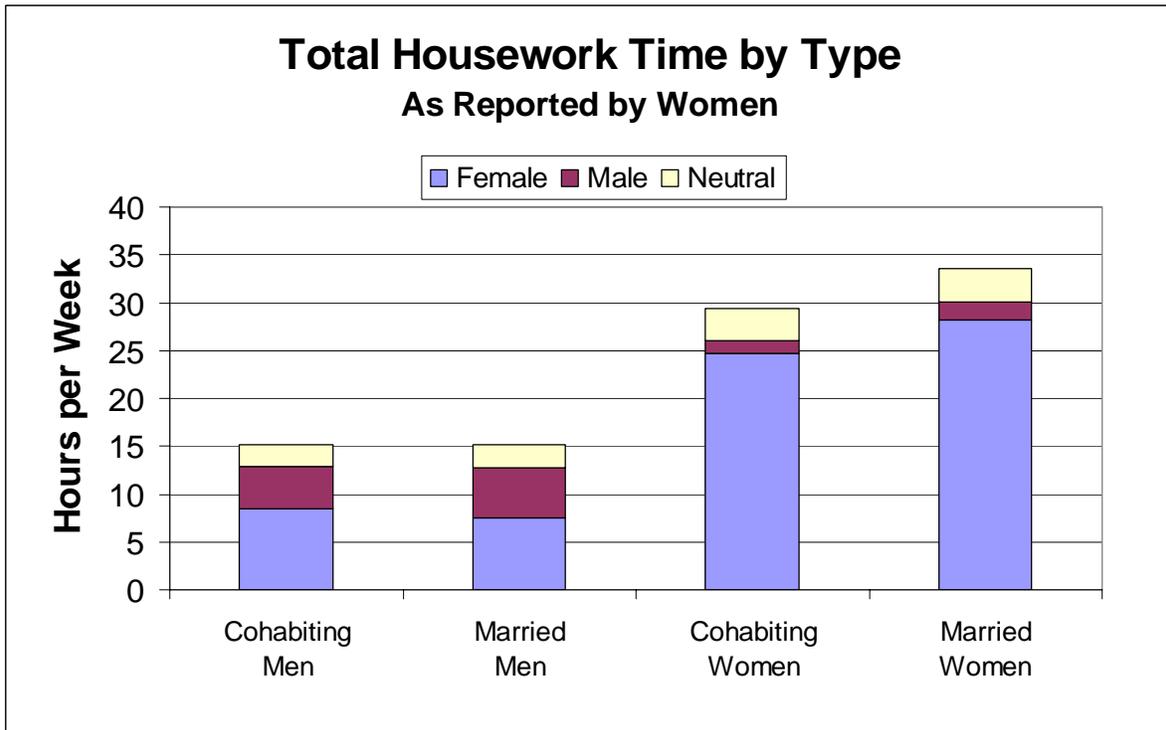


Table 1: Share of Time Spent by Male Householder
As Reported by Man
Panel A

Married Couples

	All <u>Housework</u>	Meal <u>Preparation</u>	<u>Female Type Housework</u>				<u>Male Type Housework</u>		<u>Neutral Type Housework</u>	
			<u>Dishes</u>	<u>Cleaning</u>	<u>Laundry</u>	<u>Shopping</u>	<u>Outdoor Maintenance</u>	<u>Auto Repair</u>	<u>Driving Others</u>	<u>Paying Bills</u>
Mean	36.31%	25.80%	30.50%	24.38%	17.34%	31.86%	75.15%	93.67%	41.72%	44.79%
Std. Dev.	0.1518	0.2378	0.2421	0.2139	0.2412	0.2567	0.2565	0.1864	0.3261	0.3862
Distribution										
0% or 100%	0.69	25.63	23.22	25.86	58.56	29.57	42.25	91.53	58.72	56.59
1-19% or 80-99%	14.04	14.15	15.82	21.60	7.19	6.91	16.88	0.83	4.14	3.30
20-29% or 70-79%	21.89	19.19	19.00	20.16	10.96	17.67	10.37	0.65	7.48	5.95
30-49% or 51-69%	60.71	24.61	24.36	18.83	12.49	21.95	17.40	1.62	12.55	12.87
50%	2.66	18.24	17.59	13.53	10.80	23.90	13.09	5.37	17.12	21.30
# of Observations	3354	3343	3317	3323	3301	3340	3153	2665	2311	3331
% Obs with no time	0.0%	0.3%	1.1%	0.9%	1.6%	0.4%	6.0%	20.5%	31.1%	0.7%

Cohabiting Couples

	All <u>Housework</u>	Meal <u>Preparation</u>	<u>Female Type Housework</u>				<u>Male Type Housework</u>		<u>Neutral Type Housework</u>	
			<u>Dishes</u>	<u>Cleaning</u>	<u>Laundry</u>	<u>Shopping</u>	<u>Outdoor Maintenance</u>	<u>Auto Repair</u>	<u>Driving Others</u>	<u>Paying Bills</u>
Mean	40.16%	34.80%	31.91%	28.70%	24.96%	36.02%	74.57%	92.74%	50.00%	47.08%
Distribution										
0% or 100%	1.63	25.66	27.28	24.19	45.58	26.15	57.36	89.01	73.39	40.55
1-19% or 80-99%	7.45	18.78	10.68	13.33	3.53	4.22	8.73	0.13	2.23	3.48
20-29% or 70-79%	20.08	12.80	19.19	18.64	12.14	14.40	8.20	0.12	3.28	5.66
30-49% or 51-69%	67.73	28.58	24.61	22.21	17.25	23.12	9.74	2.12	8.61	11.48
50%	3.11	14.18	18.24	21.63	21.49	32.11	15.97	8.62	12.49	38.84
# of Observations	301	299	295	300	298	299	227	218	171	298
% Obs with no time	0.0%	0.7%	2.0%	0.3%	1.0%	0.7%	24.6%	27.6%	43.2%	1.0%
Difference in Means	-4.19	-5.35	-0.92	-3.20	-4.95	-2.71	0.33	0.75	-2.73	-1.13

Table 1: Share of Time Spent by Male Householder
As Reported by Woman
Panel B

Married Couples

	All <u>Housework</u>	Meal <u>Preparation</u>	<u>Female Type Housework</u>				<u>Male Type Housework</u>		<u>Neutral Type Housework</u>	
			<u>Dishes</u>	<u>Cleaning</u>	<u>Laundry</u>	<u>Shopping</u>	<u>Outdoor Maintenance</u>	<u>Auto Repair</u>	<u>Driving Others</u>	<u>Paying Bills</u>
Mean	31.37%	21.75%	23.74%	18.69%	14.70%	26.40%	71.79%	90.02%	37.24%	38.79%
Std. Dev.	0.1612	0.2402	0.2442	0.2120	0.2323	0.2630	0.2847	0.2348	0.3344	0.3982
Distribution										
0% or 100%	1.43	36.01	37.68	41.74	65.73	43.71	46.18	88.97	64.85	65.70
1-19% or 80-99%	25.43	23.96	15.85	18.66	4.84	3.18	10.79	0.46	4.40	2.02
20-29% or 70-79%	23.84	14.81	15.59	14.90	9.13	11.78	10.98	1.03	6.07	3.64
30-49% or 51-69%	47.59	17.71	17.56	13.50	10.45	16.50	18.63	1.90	10.06	9.40
50%	1.71	7.52	13.33	11.20	9.85	24.81	13.42	7.64	14.61	19.23
# of Observations	3466	3457	3416	3416	3423	3457	3172	2613	2294	3448
% Obs with no time	0.0%	0.3%	1.4%	1.4%	1.2%	0.3%	8.5%	24.6%	33.8%	0.5%

Cohabiting Couples

	All <u>Housework</u>	Meal <u>Preparation</u>	<u>Female Type Housework</u>				<u>Male Type Housework</u>		<u>Neutral Type Housework</u>	
			<u>Dishes</u>	<u>Cleaning</u>	<u>Laundry</u>	<u>Shopping</u>	<u>Outdoor Maintenance</u>	<u>Auto Repair</u>	<u>Driving Others</u>	<u>Paying Bills</u>
Mean	34.05%	26.68%	24.42%	22.32%	20.33%	29.55%	70.75%	85.29%	45.17%	36.26%
Distribution										
0% or 100%	0.23	28.97	39.18	36.04	59.85	41.89	63.32	85.48	76.14	45.73
1-19% or 80-99%	19.64	23.86	11.52	16.50	4.00	2.23	6.58	0.84	2.11	0.89
20-29% or 70-79%	24.13	19.51	15.70	17.56	8.58	9.54	5.18	0.25	3.91	4.58
30-49% or 51-69%	54.01	15.20	17.11	13.99	7.59	12.18	11.03	5.42	6.33	10.08
50%	1.97	12.46	16.50	15.90	19.99	34.15	13.89	8.01	11.51	38.73
# of Observations	327	326	319	326	318	327	239	238	169	320
% Obs with no time	0.0%	0.3%	2.4%	0.3%	2.8%	0.0%	26.9%	27.2%	48.3%	2.1%
Difference in Means	-2.81	-3.32	-0.47	-2.81	-3.65	-2.00	0.49	2.51	-2.65	1.34

Table 2
Household Specialization Indices
by Marital Status

<u>As Reported by Men</u>	<u>SIA</u>	<u>SIM</u>	<u>SIC</u>	<u>SINC</u>	<u>SIH</u>	<u>SINH</u>	<u>SI2E</u>	<u>SIOE</u>
<i>Married Couples</i>								
Mean	0.581	0.564	0.588	0.570	0.586	0.559	0.538	0.617
Std. Dev.	0.208	0.234	0.201	0.219	0.202	0.230	0.204	0.204
# of Observations	3354	3354	2366	988	2720	634	1524	1830
<i>Cohabiting Couples</i>								
Mean	0.515	0.484	0.573	0.459	0.519	0.514	0.472	0.556
Std. Dev.	0.232	0.251	0.216	0.234	0.273	0.215	0.234	0.223
# of Observations	301	301	155	146	95	206	145	156
<i>Difference in Means (t-stat)</i>	4.79	5.33	0.83	5.40	2.37	2.58	3.25	3.32
<u>As Reported by Women</u>	<u>SIA</u>	<u>SIM</u>	<u>SIC</u>	<u>SINC</u>	<u>SIH</u>	<u>SINH</u>	<u>SI2E</u>	<u>SIOE</u>
<i>Married Couples</i>								
Mean	0.639	0.637	0.654	0.610	0.643	0.620	0.589	0.680
Std. Dev.	0.221	0.254	0.214	0.231	0.217	0.237	0.222	0.212
# of Observations	3466	3466	2445	1021	2792	674	1589	1877
<i>Cohabiting Couples</i>								
Mean	0.584	0.566	0.631	0.538	0.619	0.571	0.550	0.616
Std. Dev.	0.254	0.278	0.266	0.235	0.255	0.253	0.263	0.242
# of Observations	327	327	168	159	96	231	155	172
<i>Difference in Means (t-stat)</i>	3.77	4.44	1.10	3.58	0.90	2.59	1.78	3.35

SIA = Index calculated over all 9 housework activities for all persons.

SIM = Index calculated over 6 more mundane housework activities for all persons. Excludes "Outdoor Maintenance", "Meal Preparation", and "Auto Repair".

SIC = Index calculated for households with children; SINC = Index calculated for households without children.

SIH = Index calculated for households that own a home; SINH = Index calculated for households that do not.

SI2E = Index calculated for households where both partners are employed full-time; SINE = Index calculated for other households.

Table 3
Tobit Analysis of Specialization Index
All Tasks

	Data as Reported by Men			Data as Reported by Women		
	PANEL A			PANEL B		
	(1) Coef.	(2) Coef.	(3) Coef.	(1) Coef.	(2) Coef.	(3) Coef.
Married	0.0303 (0.0202)	0.0206 (0.0207)	0.0151 (0.0204)	0.0193 (0.0216)	0.0158 (0.0223)	0.0098 (0.0221)
Duration of Relationship		0.0024 *** (0.0008)	0.0021 *** (0.0008)		0.0027 *** (0.0009)	0.0024 *** (0.0008)
Total Time on Housework	-0.0003 (0.0002)	-0.0003 (0.0002)	-0.0004 * (0.0002)	-0.0010 *** (0.0003)	-0.0010 *** (0.0003)	-0.0010 *** (0.0003)
Number of Housework Activities	-0.0139 ** (0.0069)	-0.0135 * (0.0069)	-0.0145 ** (0.0068)	-0.0162 ** (0.0074)	-0.0173 ** (0.0074)	-0.0194 *** (0.0074)
Own Home	0.0642 *** (0.0169)	0.0592 *** (0.0169)	0.0613 *** (0.0166)	0.0510 *** (0.0182)	0.0480 *** (0.0183)	0.0491 *** (0.0181)
Live in Single Family Dwelling	0.0387 * (0.0229)	0.0361 (0.0229)	0.0382 * (0.0225)	0.0162 (0.0250)	0.0148 (0.0252)	0.0191 (0.0248)
Has 1+ Child	0.0472 *** (0.0151)	0.0444 *** (0.0152)	0.0428 *** (0.0150)	0.0765 *** (0.0162)	0.0730 *** (0.0163)	0.0711 *** (0.0161)
Has 2+ Children	0.0282 * (0.0151)	0.0274 * (0.0151)	0.0267 * (0.0149)	-0.0070 (0.0170)	-0.0075 (0.0171)	-0.0066 (0.0169)
Man's Age	0.0025 *** (0.0007)	0.0006 (0.0009)	0.0003 (0.0009)	0.0028 *** (0.0007)	0.0005 (0.0010)	0.0004 (0.0010)
Man's - Woman's Age	-0.0003 (0.0012)	0.0009 (0.0013)	0.0013 (0.0013)	-0.0019 (0.0013)	-0.0003 (0.0014)	-0.0004 (0.0014)
Man Should Not Work Same Hours (Woman)			0.0288 (0.0183)			0.0221 (0.0195)
Man Should Work Same Hours (Woman)			-0.0326 *** (0.0121)			-0.0406 *** (0.0136)
Man Should Not Work Same Hours (Man)			0.0024 (0.0164)			0.0046 (0.0186)
Man Should Work Same Hours (Man)			-0.0527 *** (0.0116)			-0.0451 *** (0.0128)
Atheist			-0.0155 (0.0157)			-0.0422 ** (0.0177)
Both Partners Lived with Parents			0.0251 ** (0.0102)			0.0049 (0.0112)
# Left Censored	3	3	3	4	4	4
# Right Censored	39	39	39	75	74	74
# of Observations	1669	1658	1658	1744	1731	1731
Log likelihood	117.61	123.00	151.94	-104.29	-100.24	-76.92

* Indicates statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level for a 2-sided test.

Table 4
Tobit Analysis of Specialization Index
Mundane Tasks

	Data as Reported by Men			Data as Reported by Women		
	PANEL A			PANEL B		
	(1)	(2)	(3)	(1)	(2)	(3)
	Coef.	Coef.	Coef.	Coef.	Coef.	Coef.
Married	0.0497 ** (0.0231)	0.0445 * (0.0238)	0.0385 (0.0234)	0.0354 (0.0256)	0.0358 (0.0265)	0.0287 (0.0262)
Duration of Relationship		0.0017 * (0.0009)	0.0014 (0.0009)		0.0026 ** (0.0010)	0.0023 ** (0.0010)
Total Time on Housework	-0.0005 (0.0004)	-0.0004 (0.0004)	-0.0006 (0.0004)	-0.0025 *** (0.0005)	-0.0025 *** (0.0005)	-0.0025 *** (0.0005)
Number of Housework Activities	-0.0348 *** (0.0115)	-0.0339 *** (0.0115)	-0.0363 *** (0.0113)	-0.0272 * (0.0140)	-0.0244 * (0.0141)	-0.0275 ** (0.0139)
Own Home	0.0633 *** (0.0189)	0.0590 *** (0.0190)	0.0603 *** (0.0186)	0.0488 ** (0.0211)	0.0464 ** (0.0212)	0.0464 ** (0.0210)
Live in Single Family Dwelling	0.0517 ** (0.0261)	0.0498 * (0.0261)	0.0510 ** (0.0256)	0.0050 (0.0293)	0.0047 (0.0295)	0.0085 (0.0291)
Has 1+ Child	0.0452 ** (0.0177)	0.0428 ** (0.0178)	0.0408 ** (0.0175)	0.0888 *** (0.0198)	0.0852 *** (0.0199)	0.0837 *** (0.0196)
Has 2+ Children	0.0354 ** (0.0173)	0.0364 ** (0.0174)	0.0351 ** (0.0170)	-0.0098 (0.0202)	-0.0113 (0.0203)	-0.0107 (0.0200)
Man's Age	0.0025 *** (0.0007)	0.0012 (0.0010)	0.0007 (0.0010)	0.0033 *** (0.0008)	0.0012 (0.0012)	0.0010 (0.0012)
Man's - Woman's Age	0.0005 (0.0014)	0.0014 (0.0015)	0.0018 (0.0015)	-0.0023 (0.0016)	-0.0009 (0.0017)	-0.0010 (0.0016)
Man Should Not Work Same Hours (Woman)			0.0236 (0.0210)			0.0298 (0.0231)
Man Should Work Same Hours (Woman)			-0.0474 *** (0.0139)			-0.0460 *** (0.0161)
Man Should Not Work Same Hours (Man)			0.0056 (0.0188)			-0.0004 (0.0221)
Man Should Work Same Hours (Man)			-0.0643 *** (0.0132)			-0.0566 *** (0.0152)
Atheist			-0.0071 (0.0180)			-0.0297 (0.0209)
Both Partners Lived with Parents			0.0311 *** (0.0116)			0.0071 (0.0133)
# Left Censored	12	12	12	13	13	13
# Right Censored	65	64	64	142	140	140
# of Observations	1669	1658	1658	1744	1731	1731
Log likelihood	-146.72	-140.91	-107.69	-449.05	-442.25	-420.73

* Indicates statistical significance at the 10% level, ** at the 5% level, and *** at the 1% level for a 2-sided test.

Appendix A
Sample Means by Household Type
As Reported by Women
Full Sample

<u>Variable</u>	<u>Cohabiting Couples</u>		<u>Married Couples</u>	
	<u>Mean</u>	<u>Std. Dev.</u>	<u>Mean</u>	<u>Std. Dev.</u>
SIA	0.584	0.254	0.639	0.221
Total Time on Housework	44.565	22.672	48.646	21.963
Number of Housework Activities	7.884	0.970	8.232	0.863
Own Home	0.267	0.443	0.820	0.385
Live in Single Family Dwelling	0.457	0.499	0.762	0.426
Has 1+ Child	0.488	0.501	0.648	0.478
Has 2+ Children	0.300	0.459	0.434	0.496
Has Preschool Age Child	0.290	0.454	0.287	0.452
Has School Age Child	0.236	0.425	0.366	0.482
Black	0.133	0.340	0.058	0.234
Other Race	0.240	0.428	0.117	0.321
Man's Age	35.088	9.119	41.960	9.157
Man's - Woman's Age	2.185	6.127	2.202	4.143
Man's Education	12.810	2.515	13.754	2.937
Man's - Woman's Education	0.047	2.458	0.253	2.439
Missing Woman's Education	0.001	0.036	0.001	0.034
Missing Man's Education	0.184	0.388	0.051	0.221
SMSA	0.832	0.374	0.800	0.400
Midwest	0.244	0.430	0.258	0.438
South	0.271	0.445	0.327	0.469
West	0.278	0.448	0.209	0.406
Both Working Full-Time	0.493	0.501	0.456	0.498
Months in Current Marriage (a)	0.000	0.000	184.807	122.722
Months in Current Cohabitation (b)	44.732	45.507	0.000	0.000
# of Observations	327		3466	

(a) Includes time spent cohabiting with this partner prior to marriage.

(b) Sample excludes 23 couples not reporting duration.

Appendix A
Sample Means by Household Type
As Reported by Women
Couples Working Full-Time

<u>Variable</u>	<u>Cohabiting Couples</u>		<u>Married Couples</u>	
	<u>Mean</u>	<u>Std. Dev.</u>	<u>Mean</u>	<u>Std. Dev.</u>
SIA	0.550	0.263	0.589	0.222
Total Time on Housework	40.607	18.977	44.132	20.022
Number of Housework Activities	7.807	1.006	8.202	0.835
Own Home	0.312	0.465	0.839	0.367
Live in Single Family Dwelling	0.444	0.498	0.770	0.421
Has 1+ Child	0.402	0.492	0.586	0.493
Has 2+ Children	0.200	0.401	0.357	0.479
Has Preschool Age Child	0.222	0.417	0.211	0.408
Has School Age Child	0.165	0.372	0.322	0.468
Black	0.130	0.338	0.075	0.264
Other Race	0.191	0.394	0.109	0.311
Man's Age	34.497	9.089	41.334	8.899
Man's - Woman's Age	2.094	6.171	2.045	4.143
Man's Education	13.012	2.479	13.857	2.731
Man's - Woman's Education	-0.146	2.525	0.065	2.435
Missing Woman's Education	0.003	0.052	0.003	0.050
Missing Man's Education	0.161	0.369	0.050	0.217
SMSA	0.810	0.394	0.819	0.385
Midwest	0.293	0.457	0.259	0.438
South	0.325	0.470	0.369	0.483
West	0.167	0.374	0.189	0.392
Sex	0.475	0.501	0.486	0.500
Months in Current Marriage (a)	0.000	0.000	174.526	121.145
Months in Current Cohabitation (b)	37.929	38.302	0.000	0.000
Man Should Not Work Same Hours (Woman)	0.053	0.225	0.124	0.330
Man Should Work Same Hours (Woman)	0.734	0.443	0.676	0.468
Man Should Not Work Same Hours (Man)	0.117	0.323	0.117	0.321
Man Should Work Same Hours (Man)	0.509	0.502	0.575	0.495
Atheist	0.138	0.346	0.100	0.300
Both Partners Lived with Parents	0.459	0.500	0.620	0.486
# of Observations	155.000		1589.000	

(a) Includes time spent cohabiting with this partner prior to marriage.

(b) Sample excludes 8 couples not reporting duration.

Appendix A
Sample Means by Household Type
As Reported by Men
Full Sample

<u>Variable</u>	<u>Cohabiting Couples</u>		<u>Married Couples</u>	
	<u>Mean</u>	<u>Std. Dev.</u>	<u>Mean</u>	<u>Std. Dev.</u>
SIA	0.515	0.232	0.581	0.208
Total Time on Housework	46.725	22.364	51.129	22.456
Number of Housework Activities	7.961	1.087	8.335	0.815
Own Home	0.276	0.448	0.820	0.384
Live in Single Family Dwelling	0.460	0.499	0.763	0.425
Has 1+ Child	0.494	0.501	0.649	0.477
Has 2+ Children	0.298	0.458	0.437	0.496
Black	0.158	0.365	0.061	0.240
Other Race	0.113	0.317	0.079	0.269
Man's Age	35.128	8.976	41.943	9.083
Man's - Woman's Age	2.475	5.822	2.168	4.129
Man's Education	13.286	2.517	13.838	2.966
Man's - Woman's Education	0.120	2.366	0.351	2.490
Missing Woman's Education	0.148	0.356	0.020	0.141
Missing Man's Education	0.028	0.166	0.003	0.059
Midwest	0.239	0.427	0.255	0.436
South	0.267	0.443	0.334	0.472
West	0.264	0.441	0.204	0.403
Both Working Full-Time	0.489	0.501	0.452	0.498
Months in Current Marriage (a)	0.000	0.000	186.303	121.369
Months in Current Cohabitation	45.477	46.018	0.000	0.000
# of Observations	301		3354	

Appendix A
Sample Means by Household Type
As Reported by Men
Couples Working Full-Time

<u>Variable</u>	<u>Cohabiting Couples</u>		<u>Married Couples</u>	
	<u>Mean</u>	<u>Std. Dev.</u>	<u>Mean</u>	<u>Std. Dev.</u>
SIA	0.472	0.234	0.538	0.204
Total Time on Housework	41.638	20.645	47.580	22.071
Number of Housework Activities	7.874	1.133	8.294	0.816
Own Home	0.309	0.464	0.838	0.368
Live in Single Family Dwelling	0.460	0.500	0.776	0.417
Has 1+ Child	0.418	0.495	0.598	0.491
Has 2+ Children	0.205	0.405	0.365	0.482
Black	0.133	0.341	0.080	0.271
Other Race	0.047	0.212	0.072	0.259
Man's Age	35.407	9.543	41.370	8.783
Man's - Woman's Age	2.297	5.626	1.926	4.003
Man's Education	13.477	2.695	14.019	2.733
Man's - Woman's Education	-0.117	2.735	0.195	2.440
Missing Woman's Education	0.157	0.365	0.022	0.146
Missing Man's Education	0.000	0.000	0.001	0.028
Midwest	0.303	0.461	0.263	0.441
South	0.301	0.460	0.362	0.481
West	0.161	0.369	0.186	0.389
Months in Current Marriage (a)	0.000	0.000	175.835	119.035
Months in Current Cohabitation (b)	40.315	37.775	0.000	0.000
Man Should Not Work Same Hours (Woman)	0.065	0.248	0.106	0.308
Man Should Work Same Hours (Woman)	0.595	0.493	0.655	0.476
Man Should Not Work Same Hours (Man)	0.108	0.311	0.133	0.339
Man Should Work Same Hours (Man)	0.643	0.481	0.620	0.485
Atheist	0.195	0.397	0.102	0.303
Both Partners Lived with Parents	0.468	0.501	0.624	0.485
# of Observations	145		1524	

