

5 Discrepancy between Husband's and Wife's Responses in Division of Household Labor

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Introduction

Quantitative analyses of division of household labor have come a long way. A large scale survey utilizing a nationally representative sample of households (i.e. National Survey of Families and Households) is now readily available to researchers. One of the advantageous characteristics of this survey is that parallel questions were asked for the primary respondent and his/her spouse/partner, if available. This mirror image of information from two partners is considered to be a great advantage over many other surveys which utilize responses from one spouse, usually the wife, of each couple.

This advantage comes from the fact that two spouses' responses to the same question often differ quite a bit. It has been known among researchers on household division of labor that responses to own household work performance are inflated on the average. In other words, If we look at the mean contribution of husbands, for example, for all couples, the mean value based on the husbands' reports is larger than that based on their wives' reports. This bias may be explained, in part, by such concepts as social desirability and availability of first-hand knowledge which is possessed only by the spouse who performed particular household work.

For sensitive topics such as marital violence and spouse abuse, the advantage of having couple data has been discussed (Dutton 1992; Szinovacz 1983; Szinovacz and Egley 1995). Lally and Maddock (1994) also discuss response discrepancies between sexually engaged couples (see also Booth and Welch 1978). Even for such non-sensitive topics as division of household labor, marital interaction, and marital power, there has been a great deal of discussion (Ballweg 1969; Booth and Welch 1978; Monroe, Bokemeier, Kotchen, and McKean 1985; Quarm 1981). Booth and Welch (1978), for example, deal with spousal discrepancies in various family issues including hours spent with spouse on the day before, along with frequency of intercourse and frequency of fights. They claim that three factors affect spousal consensus; structural factors including socioeconomic status and length of marriage, cohesion factors including marital satisfaction and how much time spouses spend with each other, and personal stress factors. They conclude that structural and stress factors show mixed results, but cohesion factors have little to do with response discrepancies. Quarm (1981) examined "between-spouse discrepancies" in family power in decision making and task allocation. She showed that, among others, task allocation items produced much higher correlations between the spouses (.40 to .77) than decision-making items, based on 5-point scales from "Husband always" to "Wife always."

What we don't know, however, is what to do with response discrepancies in research on division of household labor. Given inter-spouse discrepancies on the same subject, how do we utilize data from husbands and wives? How large an advantage do we have by using the combination of both partners' scores?

When we have multiple responses for the same question, we can either combine them (e.g.

average) treating the discrepancy as a result of measurement error (Booth and Welch 1978; Monroe et al. 1985; Quarm 1981) or analyze them separately treating the discrepancy as conceptually meaningful or "real" (Teachman, Carver, and Day 1995; Thomson and Williams 1984). Response inconsistencies can not be treated both as error and true discrepancy (Quarm 1981; Thompson and Walker 1982). When we are not sure which is the case, LISREL computer program has been helpful to empirically compare these two alternatives. For example, Thomson and Williams (1982) showed that, for their analysis on marital couple's childbearing expectation, treating husband's and wife's notions on child utility separately rather than combining them as a couple variable gave them a better fit between the data and their model.

The topic of this study is division of household work, however. Whether we look at the husband's time spent on household work or the wife's, or one's relative share of the total household work load, they are objective properties. Thus, any discrepancy between the spouse's estimate on him/herself and his/her spouse's estimate should be treated as a measurement error. Thus, the issue dealt in this study is different from whether a particular property pertains to individual or relationship (Thompson and Walker, 1982; Thomson and Williams, 1982).

Backgrounds and Hypotheses

Measurement errors have plagued social research, because respondent's report may not be accurate when answering behavioral questions. His/her memory may not be accurate for retrospective questions. S/he may not pay close attention to what is being asked. S/he may misinterpret questions (Quarm 1981). These are some sources of unintentional errors, which usually lead to random measurement errors.

Respondents, however, may want to make themselves appear more socially desirable or "politically correct" than they really feel or behave by answering some questions with bias. For example, age may be under-reported, and education and income overreported. In contemporary United States, men may overreport their contribution to household work because men who perform a lot of household work are more "desirable," particularly among the well-educated, white-collar population. There may be sources for other systematic, yet unintentional, errors. Respondents may not be aware of some household work performed by their spouses. Without knowledge that his wife washed dishes on the day before, or how long it took her, a husband may under-report the wife's contribution to household work. In sum, social desirability and lack of first-hand knowledge of the spouse's behavior may cause a "self-serving bias" in division of household work.

Related to the presence of self-serving bias is whether the discrepancy between the spouses is relatively stable across couples (e.g. a couple of hours or a couple of percentage points toward the respondent's favor) or not (biases are large for some spouses and small, non-existent, or negative for others). If the discrepancy is relatively stable, it gives support for many research projects which utilize only one spouse (usually wife) to represent each couple. If the discrepancy is unstable, however, it undermines these research results.

In this study, we examine discrepancies between husbands' and wives' responses to the same set of questions. We first look at whether bias is always self-serving or not. In other words, we observe whether respondents always overestimate their own contribution (alternatively, their spouses underestimate the respondents' contribution).¹ Given social desirability and lack of the first-hand knowledge of the spouse's behavior, my first hypothesis is,

H1: Both husbands and wives tend to overestimate their own contribution to household work.

Furthermore, overestimation by husbands may be larger than that by wives, since it is more desirable for men to appear performing household work than it is for women. Thus, on the average, men have more vested interest in how their contribution to household work appears, leading to larger self-serving biases than women. This leads to my second hypothesis,

H2: Husbands overestimate their own contribution to a greater extent than wives.

As a corollary of this hypothesis, I predict that this overestimation is more common with such "feminine" tasks as cooking, cleaning, washing dishes, and laundry than such "masculine" tasks as automobile repair, household maintenance, and driving.

There are some social structural and attitudinal characteristics which affect the desirability of performing household work. For example, men who believe in gender equality at home want to appear that they perform more household work to a greater extent than others. Related to that, better educated men may want to appear performing more household work since their colleagues and/or friends would find it more desirable (social class effect). Conversely, women with egalitarian gender role attitudes and/or with better education are likely to overestimate their husbands' contribution (underestimate their own) for the same reason. Thus,

H3: Respondent's gender role attitude affects his/her self-serving bias, and

H4: Respondent's education affects his/her self-serving bias.

If the lack of first-hand knowledge of the household work performed by the spouse is a source of self-serving bias, the amount that respondents know their spouses' behavior will decrease the self-serving bias. How long each respondent has been married to the spouse may be a good indicator of the accuracy of knowledge on the spouse's behavior. Also, the amount of interaction between themselves may enhance the accuracy of knowledge on the spouse's behavior (Booth and Welch 1978). Thus,

H5: The length of marriage reduces the respondent's self-serving bias, and

H6: The amount of interaction between the spouses reduces the respondent's self-serving bias.

There is a possibility that response discrepancies are not always to the estimator's advantage. In other words, each spouse may make a wrong estimate that is not necessarily in his/her favor. S/he simply may not know how much time the spouse spends on particular tasks. Even if two spouses observe the same phenomenon, their estimate may differ due to random measurement errors. In fact,

¹ Since we don't know the "true" amount of contribution of a given spouse, we don't know if the response discrepancy comes from the respondent's overestimation or the spouse's underestimation of the respondents' contribution. We use the term over- and underestimation only in comparison to the other spouse's estimate.

most of the literature in response discrepancy between the spouse measures the discrepancy as an absolute value of the difference between the two responses (see, for example, Monroe et al, 1985), or any disagreement for categorical measures. In the following section, I call the absolute value of the inter-spouse difference "discrepancy," instead of "self-serving bias." This discrepancy has little to do with social desirability which may produce self-serving bias, but may be caused by the lack of first-hand knowledge measured by short duration of marriage and/or insufficient interaction. Thus,

H5': The length of marriage reduces the response discrepancy between the spouses.

H6': The amount of interaction between the spouses reduces the response discrepancy between the spouses.

Finally, in quest for the best measure in family research, we will look at three measures of household work, estimated by husband, wife, and both, and compare them in terms of how well they each are explained by a standard set of predictor variables (see Blair and Lichter 1991; Kamo 1988). We can then empirically measure how much advantage we gain by having two spouses instead of one having answered to the same set of questions.

Methods

This study utilizes National Survey of Families and Households (NSFH) Wave 1 data (1987-1988). Selected for this paper are nine household work items; preparing meals, washing dishes, cleaning house, outdoor tasks, shopping, washing, paying bills, auto maintenance, and driving.² Respondents and their spouses were instructed to; "Write in the approximate number of hours per week that you, your spouse/partner or others in the household normally spend doing the following things." For each household task, each couple has four estimates of time spent on the task; respondent's time estimated by the respondent, spouse's time estimated by the respondent, spouse's time estimated by the spouse, and respondent's time estimated by the spouse. I rearranged these estimates by gender, resulting in four estimates for each task; wife's time estimated by the wife, wife's time estimated by the husband, husband's time estimated by the husband, and husband's time estimated by the wife. In addition to nine household work items, I created four measures of the total household work time by adding all the nine time estimates.

In the literature on division of household labor, scholars often use relative measures (i.e. proportion of husband's household work over the total work load). One reason is that relative measures are found to be more reliable than absolute measures (Blair and Lichter 1991). Thus, I create relative share measures and compute self-serving biases for them (one for husbands and the other for wives), in addition to biases in absolute time.

² The exact wordings are as follows. 1. Preparing meals, 2. Washing dishes and cleaning up after meals, 3. Cleaning house, 4. Outdoor and other household maintenance tasks (lawn and yard work, household repair, painting, etc.), 5. Shopping for groceries and other household goods, 6. Washing, ironing, mending, 7. Paying bills and keeping financial records, 8. Automobile maintenance and repair, and 9. driving other household members to work, school, or other activities.

In order to measure self-serving biases, I subtract the spouse's estimate from the self estimate. Two bias measures resulted for each of the nine household work items, total amount, and relative share; self-serving bias by wives and that by husbands. Since we utilize both spouses' responses, however, both spouses' self-serving biases for the relative measure will be identical. For example, if the husband's relative shares based on his own and his spouse's estimates were 30% and 25%, respectively, his wife's share based on her husband's and her own estimates were 70% and 75%. Self-serving bias for the husband would be $30\% - 25\% = 5\%$ while the bias for the wife would be $75\% - 70\% = 5\%$. In order to create response discrepancies regardless of which spouse is advantaged, I simply take absolute values of husband's and wife's biases for the total household work amount and the relative share. I will not consider response discrepancies for each household work item in this paper.

To test Hypotheses 1 and 2 (existence of biases and gender difference), I compute self-serving biases for husbands and wives and compare them with each other. To test Hypotheses 3 through 6 (examining causes of response biases), I regress the self-serving bias in four measures (husband's time, husband's share, wife's time, and wife's share) on various independent variables. They include years of education, two measures of gender-role attitudes, length of marriage, time spent between the spouses alone, race, income, work hours, and marital satisfaction.³ Similarly, to test Hypotheses 5' and 6' (examining causes of discrepancies), I regress the response discrepancies (absolute values of biases) on the same set of predictor variables.

Years of education, length of marriage (in years), annual income (in \$1,000 units), and work hours per week are all based on self-report. Race is dichotomized, 0 = non-Hispanic white, 1 = other. Time spent just between spouses is measured by 6-point scale from "1 = Never" to "6 = Almost every day." Marital satisfaction scale is composed of four items from the result of factor analysis. Another factor analysis resulted in two separate factors of gender-role attitudes. The first factor may be called general attitude and composed of the responses to three statements on 5-point scale from "1 = Strongly disagree" to "5 = Strongly agree."⁴ The average response to these questions is computed to result in a measure ranging from 5 (most egalitarian) to 1 (least egalitarian). The second factor may be called family-specific gender-role attitude, composed of the responses to five statements or situations.⁵ Responses to these statements/situations are recoded and rescaled, and the mean score is computed, with 5 representing the most egalitarian attitude and 1 the least egalitarian.

³ Age is not included due to the multicollinearity with length of marriage.

⁴ Three statements are; "Parents should encourage just as much independence in their daughters as in their sons," "In a successful marriage, the partners must have freedom to do what they want individually," and "If a husband and a wife both work full-time, they should share household tasks equally."

⁵ Respondents were asked whether they agree with two statements; "It is much better for everyone if the man earns the main living and the woman takes care of the home and family" and "Preschool children are likely to suffer if their mother is employed." In addition, they were asked whether they approve the following three situations; "Mothers who work full-time when their youngest child is under age 5," "Children under 3 years old being cared for all day in a day care center," and "Mother who work part-time when their youngest child is under age 5."

Findings

Table 1 shows means and standard deviations of each measure. On the average, wives spend about 36 hours per week on household work, regardless of who estimate their contribution (top half, last column). The husbands' average contribution, however, differs between their own estimate and their wives' estimate (19 hours versus 16 hours, bottom half, last column). Mean response biases in total household work load are .632 hour for wives (not significantly different from zero, using paired-sample t-test) and 2.947 hours for husbands (significantly different from zero). At the aggregate level, there doesn't seem to be any self-serving bias in wives' contribution, while there is a self-serving bias for husbands.

Standard deviations of discrepancies may be as critical as their means in this study. When standard deviations are small in comparison to the means, biases are relatively constant across couples and it may be easier to adjust for them. From the table, it is obvious that while the mean response biases are relatively small (.632 hour for wife's time and 2.947 hours for husband's), standard deviations for the biases are rather large (23.86 hours for wife's time and 15.98 hours for husband's time). This result tells us that response biases would be negative among many spouses, or many spouses underestimate their own contribution compared to their spouses' estimates.

In order to show how many spouses overestimate and how many underestimate, two more measures are shown in the table. Percentage figures (%) represent those of spouses who overestimate their own contribution. If this figure is 50%, we have the same number of overestimators as underestimators (husbands and wives whose estimates are identical to their spouses are excluded from this calculation). Closely related to this percentage figure, the ratio of overestimators over underestimators is also calculated. The ratio of 1.0 indicates there are as many overestimators as underestimators (those whose estimates are identical to their spouses' estimates are again excluded), corresponding to 50%.

When we examine each household task separately, we see that husbands tend to overestimate their own contribution (or their wives underestimate the husbands' contribution) while this bias is less prevalent for wives. In fact, wives underestimate their own contribution to shopping and paying bills, while overestimate meal preparation and cleaning tasks. The ratio of wives who overestimate their contribution to those who underestimate it is often close to 1.0, meaning there are the same number of overestimators as underestimators. Among women, self-serving bias seems to be absent, even when we look at each household work item.

Among husbands, however, the picture is quite different. The mean value of overestimation by husbands for all the household work combined is as much as 3 hours per week. All but one of the nine household tasks show statistically significant differences between husband's and wife's estimates on the former's contribution (paired-sample t-test). Another indicator of self-serving bias, ratios of overestimating husbands over underestimating ones are all above 1.0, showing the prevalence of self-serving biases among husbands. When we look at the amount of overall contribution to the household work, there are 73% more overestimating husbands than underestimating ones.

Table 1. Means and Standard Deviations of Absolute Time on Household Work, Estimated by Self and Spouse, Differences, Percent of Those Overestimate Own Contribution, Ratio of Overestimators over Underestimators, and Correlations between the Two Estimates

<u>Wife's Contribution</u>										
	Meal	Dish	Clean	Out	Shop	Wash	Bills	Auto	Drive	Total
Estimated by:										
Wife	9.777 (6.71)	6.210 (5.53)	8.205 (7.69)	1.987 (3.68)	2.838 (2.54)	4.329 (3.98)	1.638 (2.36)	.174 (.88)	1.538 (3.41)	36.696 (22.53)
Husband	9.282 (6.67)	6.121 (5.74)	7.816 (7.32)	1.896 (3.46)	3.117 (3.14)	4.318 (4.11)	1.922 (2.93)	.138 (.74)	1.455 (3.21)	36.064 (24.52)
Difference	.495* (6.90)	.089 (6.33)	.388* (7.74)	.091 (3.65)	-.280* (3.45)	.011 (4.51)	-.283* (3.14)	.036 (1.08)	.083 (3.16)	.632 (23.86)
%	(54%)	(53%)	(51%)	(54%)	(45%)	(50%)	(44%)	(63%)	(52%)	(53%)
Ratio	(1.16)	(1.14)	(1.06)	(1.18)	(.83)	(.99)	(.77)	(1.71)	(1.09)	(1.12)
Correlation	.4681	.3696	.4692	.4793	.2762	.3778	.3111	.1172	.5462	.4882
<u>Husband's Contribution</u>										
	Meal	Dish	Clean	Out	Shop	Wash	Bills	Auto	Drive	Total
Estimated by:										
Husband	2.811 (3.68)	2.224 (3.20)	2.052 (3.34)	4.963 (5.89)	1.567 (1.84)	.844 (2.04)	1.360 (2.02)	1.761 (2.94)	1.336 (3.25)	18.918 (15.63)
Wife	2.446 (3.55)	1.815 (2.83)	1.645 (2.88)	4.231 (5.57)	1.259 (1.92)	.686 (1.50)	1.162 (1.99)	1.539 (2.36)	1.190 (2.96)	15.971 (13.87)
Difference	.366* (3.70)	.409* (3.45)	.408* (3.52)	.732* (5.77)	.308* (1.88)	.158* (1.93)	.198* (2.24)	.223* (2.99)	.146 (3.33)	2.947* (15.98)
%	(61%)	(65%)	(63%)	(59%)	(67%)	(60%)	(61%)	(57%)	(56%)	(63%)
Ratio	(1.56)	(1.82)	(1.67)	(1.46)	(2.01)	(1.52)	(1.56)	(1.35)	(1.27)	(1.73)
Correlation	.4761	.3505	.3686	.4942	.5000	.4382	.3756	.3785	.4277	.4182

Note: Asterisks (*) indicate that the difference between the two estimates is significant, using paired sample t-test ($\alpha = .05$).

From these results, we can conclude that Hypothesis 1 is supported only for husbands, and not for wives. Self-serving bias exists among husbands, but not among wives. This conclusion automatically supports Hypothesis 2, stating husbands' self-serving bias is larger than the wives'. It appears that self-serving bias results from social desirability rather than lack of first-hand knowledge. If the latter were a significant factor, we would not have seen gender differences in self-serving biases. It is more desirable for husbands to perform household work than for wives. Thus, larger biases among husbands. Definitive conclusions of these two factors, social desirability and lack of first-hand knowledge will have to wait for the results of hypotheses directly testing them (Hypotheses 3 through 6), however.

When we examine Table 1 carefully, we notice that there are tasks for which the husband's self-serving bias is relatively common. Seemingly the best indicator of the prevalence of self-serving bias is the ratio of overestimators over underestimators. Using this ratio as the criterion, husband's self-serving bias is particularly common with shopping, washing dishes, and cleaning the house, and least common with driving, automobile repair, and household maintenance. This is in line with the explanation of self-serving bias due to social desirability. Self-serving bias is more prevalent in

"female" household tasks than "male" tasks because it is more desirable for husbands to do the former than the latter.

Table 1 also shows the correlation coefficient (r) between the husband's and wife's responses for the same actor. Correlations range from moderate (.5462 for wife's driving) to very small (.1172 for wife's automobile maintenance). These correlations are generally small and this should make us concerned about the reliability and/or validity of these question items. Correlation coefficient of .1172 indicates that the amount of time the wife spends on automobile tasks estimated by herself is hardly related to the same property estimated by her husband. Quarm (1981) explains low inter-spouse correlations with the notion of "unclear answer" and claims that less frequent activities produce lower correlations. Automobile repair by wives is probably the least frequent activity and the extremely low inter-estimator correlation can be explained by this fact.

These small correlations, however, may not be too surprising. When absolute measures, or the number of hours one spends per week for each household task, are created, it is known to be rather unreliable. There are two ways to "correct" this problem. The first is to utilize two spouses', instead of one's, responses to the same indicator. Instead of the husband's own report, we may use both spouses' estimates of the husband's contribution to the household work. The second method to improve the reliability of household work measure is to use estimates for both spouses and combine them into a single measure, such as the husband's relative contribution to the total household work load ($H / (H + W)$). The assumption for relative measures is as follows: though respondents may either over- or underestimate time contributions by themselves and by their spouses, they are cancelled out if we take the proportion of one spouse's contribution over the joint contribution.

To test Hypotheses 3 through 6 (effects of gender-role attitude, education, length of marriage, and the amount of spousal interaction on self-serving bias), I regressed the self-serving bias for all nine household tasks combined upon gender-role attitude, family-role attitude, education, the length of marriage, the amount of interaction, and control variables (Table 2). The table also includes regression coefficients for discrepancy between the spouses (regardless of sign, Hypotheses 5' and 6'). Control variables include race, income, work hours, and marital satisfaction.

First of all, R^2 s are relatively small, ranging from .009 to .039. This is not surprising since the equations try to predict subtle differences between husbands and wives who estimated the same property. Comparing R^2 s across the two panels, it also seems that discrepancies (absolute values of the differences between the two spouses' scores) are better predicted than are self-serving biases (own estimate - spouse's estimate). I will discuss prediction equations for self-serving biases and response discrepancies separately in the following paragraphs.

Gender-role attitudes and family-role attitudes fail to show any significant relationship with self-serving bias. Hypothesis 3 is not supported. Wives' education is related to self-serving biases on their absolute time spent on household work in the predicted direction. The finding indicates that less educated wives tend to overestimate their own contribution. Alternatively, the more educated wives tend to underestimate their contribution. Here, education serves as a variable to measure social class and subculture within each class. With only one coefficient out of possible four being statistically significant, Hypothesis 4 received only weak support.

Table 2. Regression Estimates of Self-Serving Bias and Response Discrepancy (N=1,407)

Dep. Var. Measure	Self-Serving Bias = A - B				Discrepancy = A - B			
	Husband's Time	Wife's Share	Wife's Time	Husband's Share	Husband's Time	Wife's Share	Wife's Time	Husband's Share
Mean	3.05	4.56	0.85	4.56	9.47	9.82	15.13	9.82
Predictor Variables								
Length of Marriage	-.054	-.057	-.059	-.078*	-.070*	-.041	-.068	-.024
Time Spent Alone	.028	.488	.646	.507	-.446	.093	-.019	.328
Education	-.272	-.098	-.647*	-.039	-.321*	-.336*	-.548*	-.452*
Gender-Role Attitude	-.711	.304	.712	-.032	.889	.401	-.575	1.184*
Family-Role Attitude	.372	.306	.723	.465	.390	-.266	-.355	.072
Race	3.335*	.483	-5.174*	.176	2.726*	1.818	3.089	2.295*
Income	.007	-.003	-.040	-.006	-.019	.006	-.082	-.034
Work Hours	.001	.011	-.036	-.032	-.039	-.011	-.024	.024
Marital Satisfaction	.167	-1.699*	-1.305	-1.407*	.584	-1.248*	-.790	-1.343*
Intercept	8.798	4.325	6.780	5.710	11.957	14.171	27.942	10.648
R ²	.009	.017	.013	.017	.024	.027	.026	.039

Note: *p<.05

Hypothesis 5 concerns length of marriage, which shows a significant relationship with self-serving bias for wives' relative measure in the predicted direction. The longer they have been married, the smaller their self-serving bias. Alternatively, the shorter they have been married, the larger their self-serving bias. This variable, however, fails to show significant relationships with three other measures of self-serving biases (based on husband's time, wife's time, and husband's share), rendering a weak support for the Hypothesis 5. Hypothesis 6, concerning the amount of time husbands and wives spend between themselves, receives no support from the findings.

Among control variables, race and marital satisfaction show interesting relationships. Non-white husbands tend to overestimate their own contribution (in absolute time) while their wives tend to underestimate their own contribution (also in absolute time). Alternative interpretation is that non-white husbands overestimate both their own and their wives' contribution (or wives underestimate both their own and their husbands' time). When relative measures are computed based on each spouse's estimate, this racial difference disappears. In addition, both husband's and wife's marital satisfactions are negatively related to his/her self-serving bias; less satisfied spouses tend to overestimate their own contribution. This can probably be interpreted with the notion of distorted reality when one is not satisfied with his/her marriage.

Husbands' response discrepancies (difference between spouses' estimate regardless of the sign) are negatively related to the length of marriage, when the former is measured by absolute time. The longer a husband is married, the smaller the discrepancy with his wife's estimate, or probably, the

more accurate his estimate is. This is the only significant coefficient out of four pertaining to Hypothesis 5' (length of marriage effect). It receives only weak support. The time spent together by husbands and wives alone is not related to response discrepancies, no matter how the latter is measured. Hypothesis 6' receives no support.

Among other variables in the model, both spouses' education measures are negatively related to discrepancy; the more educated spouses are probably more accurate in their evaluation of household task performance. This finding is opposite to Monroe, et. al. (1985) who found "response consistency decreased as education level of the couple increased" (p. 736). If, however, we believe that education brings in an additional resource such as more accurate measurement of time, etc., the negative relationship between education and response discrepancy can be explained, if not the opposite relationship found by Monroe and her colleagues.

Race shows an interesting relationship again. Non-white couples seem to be less accurate in their evaluation of household work performance. Marital satisfaction shows a negative relationship with response discrepancy; the more satisfied a spouse is, the smaller discrepancy. This finding is similar to Monroe, et. al. (1985) which shows a negative relationship between "response consistency" and spousal tension. This may have something to do with a relationship between satisfaction and accurate assessment of the situation. We should be careful to interpret any relationship involving response discrepancy whenever the corresponding relationship involving self-serving bias is significant, since the former may be an artifact of the latter. Finally, wife's non-traditional gender-role attitude is positively related to her response discrepancy with her husband's, at least in the relative share measure. We may interpret that this is caused by non-traditional wife's frustration in spousal relationship, but we should be cautious about this interpretation without any more evidence.

Table 3. Ten Measures of Division of Household Labor: Means, Standard Deviations, and Variance Explained by Twelve Predictor Variables ^a

Performed by:	Husband	Wife	Hus. Share (%)
Estimated by:			
Husband	18.92 (15.63) R ² =.054	36.06 (24.52) R ² =.125	35.23 (16.86) R ² =.215
Wife	15.97 (13.87) R ² =.052	36.70 (22.53) R ² =.154	30.73 (16.73) R ² =.221
Correlation	.432	.514	.663
Mean of Total Amounts	17.44 (12.43) R ² =.068	36.38 (20.30) R ² =.179	32.98 (15.32) R ² =.260
Utilizing Means for Each Task	17.44 (12.43) R ² =.068	36.38 (20.30) R ² =.179	33.03 (15.41) R ² =.254

Note: a. Twelve predictor variables are, length of marriage, respondent's race, each spouse's income, education, employment hours, gender-role attitude, and family-role attitude.

Now, I turn my attention to creating the best possible measure of two spouses' contributions to the total household work. I computed the proportional measures of the husband's contribution to the joint contribution by both spouses. Two measures were created, one estimated by the husbands themselves and the other by their wives. The top half of Table 3 indicates the results. On the average, husbands estimate that they contribute 35.2 % of the joint household work load by themselves and their wives, while their wives estimate their husbands' mean contribution as 30.7%. On the average, husbands give themselves credit for 4.5 percentage points more than their wives do. Alternatively, wives give themselves credit for 4.5 percentage point more than their husbands do (69.27% - 64.77%).

Correlations between the husband's absolute time estimated by himself and the same property estimated by his wife is relatively low at .432.⁶ The corresponding inter-estimator correlation for the wife's time spent on the household tasks is a little higher at .514. When I compute an inter-estimator correlation for husband's relative share (%), it is moderately high at .663. It appears that husband's relative share in the household work (or wife's share in the household work, which is 100% - husband's share) is the most reliable among the three measures.

Given large discrepancies between the two spouses' estimates and only moderate magnitudes of the inter-estimator correlations, it seems sensible to combine two estimates (one by husband and the other by wife) to produce a single measure. Simply taking a mean of the two estimates is the most intuitive approach and this is adopted here. We see these values right below inter-estimator correlations. There is, however, another method to utilize both spouses' estimates. Instead of taking means of the total contributions, we can look at both spouses' estimates for each household task for each spouse. We then compute mean values for each household task for each spouse and compute husband's time, wife's time, and husband's relative contribution for the total household work load. The first two measures (each spouse's time estimates) turn out to be identical to the inter-spouse mean of total time estimates using each spouse's estimates, but the last measure (husband's relative share) is a little different from the mean of two relative measures (one estimated by the husband and the other estimated by the wife). The above operationalization produces 10 measures (12 measures minus two sets of identical values), shown in Table 3.

The final analysis of this study is to regress each of 10 measures upon a standard set of predictor variables for division of household labor. As predictor variables, I include length of marriage, respondent's race, each spouse's income, education, employment hours, gender-role attitude, and family-role attitude. Note that the unit of analysis is now couples instead of individuals, which is a standard procedure to predict division of household labor.

Along with means and standard deviations, Table 3 shows R^2 's for each measure with the same set of predictors. Two patterns are obvious from this table. Moving from top to bottom, taking a mean of the two estimates increases R^2 's. For the same dependent variable (husband's time, wife's time, or relative share), utilizing both spouses' estimates by combining them produces substantially larger R^2 's. Moving from left to right, using the husband's relative share (or the wife's) increases R^2 's.

⁶ Inter-spouse correlations are slightly different from those in Table 1, since those in Table 3 are based on a fewer number of cases due to inclusion of other variables in multiple regression analyses.

For the same estimator (husband, wife, or both), utilizing relative measures produces substantially larger R^2 s. Overall, mean value of the relative shares by both spouses' estimates produces the largest R^2 , which is .260. When I compute mean values for each of the nine tasks and compute the relative measure, R^2 is similar at .254.

Discussion

The fact that self-serving bias exists only among husbands indicates that social desirability, rather than the lack of first-hand knowledge of household work performed by the spouse, is a major factor. There would be much larger gender differences in social desirability of performing household work than those in the lack of first-hand knowledge of household work performed by the spouse. Our finding related to social desirability agrees with past findings (Quarm 1981). The general lack of the effect of first-hand knowledge is also in line with Booth and Welch (1978).

Self-serving biases were found among husbands. According to Quarm (1981), "Most studies examining aggregate level data have found similar means or percentage distributions for wives and husbands" (p. 522). There are two possible reasons for the difference between this study and other studies. First, NSFH utilized a detailed measure, the number of hours each spouse spends on each household task. Many of past surveys, on the other hand, used less refined measures such as a 5-point scale from "Wife always" to "Husband always." The detailed time measure is more likely to produce subtle biases or discrepancies.

Secondly, motivations for self-serving biases may have increased during the past several decades. As more married women have pursued their own careers, egalitarian gender-role attitudes and sharing household work between the spouses are more "socially desirable" than ever. Whether husbands participate in more household work than before, motivations for them to appear to perform a lot of household work may be higher now than before. Self-serving biases among husbands, which were largely missing, may now be prevalent due to this historical change.

While self-serving bias is found among husbands, it is not universal. About 37% of the husbands underestimate their contributions to all the household work combined compared to their wives' estimates. This will pose a serious problem for family researchers since there is no way for us to "adjust" or "correct" the response bias if the direction of the bias is not known. In fact, differences by spouses seem to be more of random direction (discrepancies) than positive (self-serving bias). This is particularly true among wives who do not seem to have any self-serving bias in estimating their contribution to the household work.

The fact that the mean of both spouses' estimates of the husband's relative share produced the larger explained variance (R^2) than any other measures, either the husband's or wife's estimate, absolute or relative amount, indicates that each spouse's estimate suffers from a random measurement error (Quarm 1981). This finding, however, needs to be clarified in two aspects. First, either husband's or wife's absolute time spent on household tasks is qualitatively different from the husband's (or wife's) relative share. Though husband's (or wife's) relative share is the most relevant in many

family research settings, there are occasions in which either husband's or wife's absolute time spent on household tasks is more relevant (e.g. South and Spitze 1994). Second, R^2 may not be the best criterion to evaluate validity of certain measures. It is an external criterion and thus the evaluation depends on which predictor variables we choose, for example.

There is another advantage of paired data related to missing values. When both spouses (or multiple family members) estimate the same property, it may be sensible to impute missing values by other family members' (or the other spouse's) responses. Suppose that a respondent answered eight out of nine household task questions. If we create a measure for his/her total household work time by adding time estimates for each task, this person will be coded as missing. We lose eight pieces of information due to one missing value. If we have his/her spouse's estimate on this missing task available, we may use this value as the best approximation. If we use this procedure, we can boost up the number of cases, whether we take the inter-spouse mean of total contribution or inter-spouse means of each household work. Needless to say, this can be said for other objective variables such as household income, number of children, or the frequency of interaction between the spouses.

Depending on the analytical plan, we may be able to use husband's and wife's estimates for the same property (i.e. husband's relative share of the household work) as two indicators of the same latent dimension (Kamo 1986). Since two-indicator dimensions are not statistically identifiable, however, we need to place an additional piece of restriction such as equal reliability for husband's and wife's estimates.

Yes, having two spouses' responses to the same event is advantageous. Having multiple family members' responses will be advantageous. Findings of this study can be applied to other less sensitive topics in family research, such as frequency of interaction between spouses, frequency of parent-adult children contacts, family decision making, and even education and household income.

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重点領域研究「ミクロ統計データ」・公募研究（課題番号08209118）
「家族構造の国際比較のための基礎的研究－公共利用マイクロデータの作成と活用－」
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－米国NSFH調査データの利用を通して－

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