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EQUITY DYNAMICS IN THE PERCEIVED FAIRNESS OF CHILDCARE

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Abstract

We assess several hypotheses derived from equity theory regarding how the fairness of childcare is affected by spouses' relative contributions to both childcare and other domains of their relationship. Longitudinal data on 178 couples expecting the birth of their first child were collected over four time periods, spanning approximately the first year of the child's life. Although fathers' contributions to childcare had the strongest effect on perceived fairness, spouses were more likely to see childcare as fair to the wife the more the father worked in paid labor and participated in housework and the more the wife benefited in their sexual relationship. Fathers' contributions to childcare have a stronger effect on fairness perceptions when the child is a son. Additionally the less the father contributes to childcare, the greater the gender gap in fairness perceptions, with mothers being more likely than fathers to see childcare as fair to mothers.

Keywords: childcare, equity theory, fairness perceptions, longitudinal study, multilevel modeling, infants.

Equity Dynamics in the Perceived Fairness of Childcare

The distributive justice of unpaid household labor has inspired substantial research attention over the last few decades. Most of this attention has focused on spouses' perceptions of the fairness of the division of labor in their marriage with respect to household chores (e.g., DeMaris & Longmore, 1996; Gager & Hohmann- Marriott, 2006; Mikula, Riederer, & Bodi, 2012). Relatively less attention has been given to the fairness of child care, on the other hand (some exceptions are Grote & Clark, 1998; Grote, Naylor, & Clark, 2002; Hawkins Marshall, & Meiners, 1995; Mikula Schoebi, Jagoditsch, & Macher, 2009; Reichle & Gefke, 1998). Caring for children constitutes one of the most important functions of the family. Moreover, it is a task associated with considerable time, energy, and stress for parents (Thompson & Walker, 1989). It is therefore imperative that social scientists also understand the extent to which this arena of marriage is characterized by a sense of justice, and the factors contributing to this sense.

A common theoretical framework applied to perceptions of fairness in household labor is the distributive justice paradigm (Hawkins, et al., 1995; Kluwer, Heesink, & van de Vliert, 2002; Mikula, et al., 2009). As women perform most unpaid family labor, the paradigm is often couched in terms of what affects women's sense of fairness in this endeavor. The framework suggests that women's evaluations of justice depend on three components: the comparison standards on which women base their judgments, the extent to which domestic labor results in valued outcomes for women, and the justifications employed by both spouses to legitimate the existing division of labor. Generally, wives see domestic labor as more unfairly apportioned the less their husbands contribute to it, the more they compare husbands' contributions to their own

contributions, and the less they feel appreciated for the work they do (Hawkins, et al.; Kluwer, et al.; Mikula, et al.).

Although useful, this paradigm is somewhat limited. Its view of household labor as the focal point of justice evaluations tends to disregard the larger context of married life. In addition to housework and childcare, spouses need to relate to each other as companions and lovers. Someone also needs to work in the paid labor force to support the standard of living of the household. Marriage is, above all, a partnership. And couples understand that each spouse has contributions to make in a number of potential domains relevant to family life. In recent years, DeMaris and his associates have articulated a form of equity theory that stresses the multidimensional nature of spousal contributions as affecting various marital outcomes including perceptions of housework fairness, long-term marital stability, and marital quality (DeMaris, 2007, 2010; DeMaris & Longmore, 1996; DeMaris, Mahoney, & Pargament, 2010). In this paper, we bring this perspective to bear on evaluations of the fairness of childcare.

In particular, we employ longitudinal data from a study of 178 married couples across the transition to first parenthood to examine determinants of the perceived fairness of childcare. Four measurement occasions were utilized over a period covering from the third trimester of pregnancy to approximately a year after the birth. We study husbands' as well as wives' perceptions of justice in infant care. Unlike some other studies that use single-item measures of childcare fairness, we use a multi-item measure referencing the fairness of nine separate childcare tasks. To further tease out differences in perceptions by gender, we utilize a multilevel modeling strategy that illuminates how factors affect both the level of justice in childcare as well as the gender gap in justice perceptions. We begin by reviewing relevant theory.

Theoretical Considerations

Gender Differences in Workload

The tone of much of the literature concerning the fairness of domestic work was set in the 1980s by Hochschild's seminal work (Hochschild, 1989). Employing in-depth interviews with a small sample of women, she claimed that men's lack of participation in housework and childcare meant that working women engaged in two shifts of work. The first shift was the regular workday; the second shift was the additional workday women put in taking care of housework and childcare after hours. Based on earlier studies from the 1960s and 1970s, Hochschild also estimated that women do about 15 hours per week more total (paid and unpaid) work than men. Thus came into being the image of the lazy, leisure-loving husband refusing to do his share of the domestic labor and standing in the way of the gender revolution. From a social-psychological standpoint, the further conundrum was that a majority of both women and men saw this lopsided arrangement as fair (Grote, et al., 2002), although women were more likely than men to report this as unfair to the wife (Gager & Hohmann-Marriott, 2006).

Recent re-evaluations of time-use and other data suggest that claims of female work overload and male goldbricking have been largely exaggerated. An extensive study of time-use data from Australia and the United States found that on average, across all family types, total work time is close to parity, with men actually putting in about an hour and a half more per week of total (paid and unpaid) work than women (Sayer, England, Bittman, & Bianchi, 2009). England (2011) further notes that even after searching the various sources mentioned by Hochschild (1989), she could not find evidence of the 15-hour gap mentioned therein. Moreover, there is some evidence that men's jobs are more likely than women's to involve considerable stress. For example, although men constituted 53% of the work force in 2013, they accounted for 93% of workplace fatalities (<http://www.bls.gov/iif/oshwc/cfoi/cfch0012.pdf>). The occupations

listed by the Bureau of Labor Statistics as having the highest fatal injury work rates are largely monopolized by males, with proportion female ranging from 25.3% (farmers, ranchers, and other agricultural managers) to less than six percent (logging workers, fishers and related fishing workers, aircraft pilots and flight engineers, roofers, refuse and recyclable material collectors, mining machine operators, drivers/sales workers and truck drivers, electrical power line installers and repairers, construction laborers; information can be found at <http://www.bls.gov/iif/oshwc/cfoi/cfch0012.pdf> and <http://www.bls.gov/cps/cpsaat11.htm>).

Given these considerations, it may not be so mystifying that most couples see the division of domestic labor as fair. Despite women putting in more time in, say, housework, men's contributions in the work force and perhaps also in childcare may be sufficiently compensatory to even out the workload.

Equity Theory

Equity theory has been drawn upon to account for spouses' perceptions of the fairness of domestic work in several studies. Equity theory essentially considers notions of justice to be paramount in human relationships involving exchanges of valued resources. Such relationships rely on each participant reaping outcomes from the relationship that are commensurate with his or her contributions to the relationship (Adams, 1965; Walster, Walster, & Berscheid, 1978). Judging whether outcomes are commensurate with contributions was suggested by Adams to be a simple matter of evaluating the ratio of outcome to input for each participant. If these ratios were equal, then the relationship was equitable. If not, then the participant whose ratio was greater was overbenefited, and his or her counterpart was underbenefited. Either departure from equity was held to be stressful and would induce pressures to either (a) change the nature of the

exchange, (b) change how the exchange was perceived, or (c) terminate the relationship (Adams; Walster, Walster, & Berscheid).

Equity theory is readily applied to intimate relationships, as these also involve the exchange of resources, whether goods or services, or less tangible elements such as love and caring, or time invested in the relationship. The notion of *compensatory contributions* is central to DeMaris and associates' conceptualization of equity dynamics in marriage (DeMaris, 2007, 2010; DeMaris & Longmore, 1996; DeMaris, et al., 2010). In a series of articles, these authors established a means of measuring the balance of give and take in intimate relationships across multiple possible domains of exchange. In particular, the use of ratios of outcome to input in the areas of housework, paid work hours, income, health status, childcare, and other arenas taps the participant's overall outcome-to-input ratio. Using ratios eliminates the problem of the different metrics that are used to tap each exchange domain, since the units cancel in each division. To the extent that these ratios are comparable for partners, then equity obtains in the relationship. The equity can be considered compensatory because an imbalanced ratio in one exchange domain can be compensated for by an imbalance in the opposite direction in another domain. To the extent that the ratios are not comparable, the relationship is inequitable with respect to one or the other partner. These authors' and several others' studies have found support for the notion that exchange inequity has a deleterious effect on marital outcomes, influencing everything from marital unhappiness to depression and even marital disruption (Buunk & Van Yperen, 1991; DeMaris; Frisco & Williams, 2003; Glass & Fujimoto, 1994; Joyner, 2009; Longmore & DeMaris, 1997; Sanchez, Manning, & Smock, 1998; Van Yperen & Buunk, 1990).

The Perceived Fairness of Childcare

Only a few studies have examined the fairness of childcare. Wives appear to enjoy childcare more than husbands do (Grote & Clark, 1998; Grote et al., 2002). Wives are more likely than husbands to report being skilled at childcare and that their spouses think they are competent in this regard (Grote & Clark, 1998; Grote et al., 2002). The perceived fairness of childcare has been found to decline over time, and husbands see less fairness in the distribution of tasks compared to wives (Grote & Clark; Grote et al.). Among the factors affecting the perception of fairness in childcare are relational comparisons. Women see child care as less fair the more they compare what they do with their husband's efforts (Grote & Clark; Grote et al.; Mikula et al., 2009). Both partners also rate family work as less fair to the woman the more time she spends on professional work and the higher her SES (Mikula et al.). Wives see child care as more fair the more they enjoy doing it (Grote & Clark; Grote et al.), and the more they feel appreciated for it (Hawkins et al., 1995). Wives' perception that their husbands are competent at child care also enhances their perceived fairness in it. Neither enjoyment nor competence is a significant predictor of childcare fairness for husbands, however (Grote & Clark; Grote et al.).

Work on what accounts for husband-wife *differences* in perceptions of the fairness of family work is even scarcer. Only one recent study employed hierarchical linear modeling to assess what predicts mother-father discrepancies in reports of father involvement in the care of children (Coley & Morris, 2002). The authors found (a) mothers uniformly reported lower levels of father involvement than fathers did, and (b) this discrepancy was larger among pairs with more-educated mothers and where there was more father-mother conflict (Coley & Morris). In sum, there are almost no studies that consider how compensatory equity may operate in affecting the perception of fairness in childcare. And no study to date has examined what factors might affect the *discrepancy* in spouses' perceptions of the fairness of childcare. The latter may be

important to the extent that discrepancies in such perceptions could presage relationship conflict at some later time.

Current Study Hypotheses and Rationale

In the current study we draw on previous findings regarding perceptions of fairness in both housework and childcare to inform our hypotheses. The perception that the division of labor is fair to the wife in either housework or childcare has been found to be, first and foremost, influenced by the relative time each spouse spends engaged in the activity. The more husbands have contributed to these activities, relative to their wives, the more both spouses appear to feel the enterprise is fair to the wife (DeMaris & Longmore, 1996; Gager & Hohmann-Marriott, 2006; Grote & Clark, 1998; Grote et al., 2002; Hawkins et al., 1995; Kluwer, et al., 2002; Lennon & Rosenfield, 1994; Mikula, et al., 2012; Mikula, et al., 2009). DeMaris and Longmore also found that the greater husbands' relative contributions to childcare, the more both spouses perceived the housework distribution to be fair to the wife. Our first hypotheses, therefore, pertain to the relative time spouses spend in either type of domestic labor:

H₁: The greater fathers' relative contribution to infant care, the greater the probability either spouse sees the division of childcare as fair to the wife.

H₂: The greater fathers' relative contribution to housework, the greater the probability either spouse sees the division of childcare as fair to the wife.

Net of contributions to housework and childcare, a handful of other factors have been found to be influential in perceptions of fairness. In particular, the greater the husband's contribution to hours engaged in paid labor, relative to the wife, the less likely spouses have reported the division of labor in domestic work to be unfair to the wife (DeMaris & Longmore, 1996; Gager & Hohmann-Marriott, 2006; Kluwer et al., 2002). For wives, greater marital

dissatisfaction at an earlier time has been found to be predictive of later perceptions that housework is unfair (Grote & Clark, 2001). On the other hand, women who believe that their lives would be worse outside of their marriage are more likely than others to see the existing housework distribution as fair (Lennon & Rosenfield, 1994). The sexual relationship is important to marriage, especially for men (Jackson, Miller, Okay, & Henry, 2014; Thompson & Walker, 1989). It would therefore seem that spouses' relative sexual availability to each other would influence feelings about fairness in other relationship domains, including childcare. A handful of factors have also been found to moderate the effect of equity considerations. DeMaris and his colleagues found that more-religious couples' marital satisfaction was less affected by inequitable relationship exchanges than was the case for less-religious couples (DeMaris, 2010; DeMaris, et al., 2010). Child characteristics are likely to influence how strong an effect equitable contributions in childcare would have on perceptions of equity. A relatively lower contribution on the part of fathers to childcare should have a stronger effect on wives' perception of inequity when the pregnancy was unplanned or when the infant is particularly fussy. Nelson and O'Brien (2012) found that, among mothers experiencing high parenting stress, an unplanned pregnancy was related to a greater level of depressive symptoms. Östberg and Hagekull (2000) further found that mothers who described their children as more irregular and more fussy-difficult reported more stress. Also, because fathers are expected to be more involved with sons than with daughters (Fagan, 2014), father's relative contributions to childcare should have a stronger effect on fairness perceptions when the child is a son. Our remaining hypotheses are, therefore:

H₃: The greater fathers' relative contribution to paid labor, the greater the probability either spouse sees the division of childcare as fair to the wife.

H4: The greater fathers' relative contribution to the quality of the couples' sexual relationship, the greater the probability either spouse sees the division of childcare as fair to the wife.

H5: Fathers' relative contributions to childcare have a stronger effect on the perception that childcare is fair to the wife for nonreligious couples, couples with poorer-quality marriages, those whose pregnancy was unplanned, those with fussier infants, and those with sons.

Method

The Data

The sample consisted of 178 married couples experiencing the third trimester of pregnancy of both spouse's first biological child. They were drawn from a mid-sized, Midwestern city and surrounding suburban and rural communities. Couples were recruited via childbirth classes; announcements posted in medical offices, retail locations or newspapers; word of mouth referrals; or direct mail. Inclusionary criteria were that spouses: 1) were married, 2) pregnant with each individual's first biological child; and 3) spoke English. Data were collected in couples' homes. Each spouse independently completed surveys that assessed the constructs used in the study. Couples were re-assessed in the same manner three more times over the course of the next year: at four, seven, and thirteen months after the first visit. These constitute waves 2 – 4 of the study and encompass approximately the first full year of the life of the newborn. Couples were paid \$75.00, \$100.00, \$100.00, and \$125.00 for their participation in waves 1 – 4, respectively. Relatively little attrition was experienced in the study. Of 178 couples at the start, 169 completed the first three waves of the study, and 164, or 92%, completed all four waves. We only employ respondents with valid data on the outcome (fairness perception) in the analyses that follow. There were very few missing responses to explanatory variables on the part of study participants. At most, 2% of responses were missing on any of these items. Therefore to

accomplish preliminary analyses, we replaced the few missing predictor values in the study using variable means, specific to survey wave and gender of spouse. All key analyses (reported in Table 2, below) however, were re-run by replacing missing predictor values via multiple imputation with 10 replications of the dataset.

Measures

Outcome variable. The outcome variable, childcare fairness, was based on a series of questions about the fairness of the division of labor on each of nine different childcare tasks. These were changing “poopy” diapers, putting the baby to sleep in the evening, changing wet diapers, getting the baby dressed in the morning, bathing the baby, getting up at night to care for the baby, feeding the baby, soothing the distressed baby, and playing with the baby. For each of these nine tasks, each spouse was asked: “How fair is the balance between the two of you for this task” with responses on a 1 – 5 scale. The anchor points for the scale were “I am doing LESS than my fair share” (1) and “I am doing MORE than my fair share” (5). Two problems presented themselves in trying to code this as a continuous scale. First, from the perspective of distributive justice, the scores are not monotonic. The middle response—a score of 3—would represent the most just outcome. Departures from that in either direction represent inequity. Second, the majority of fathers and mothers selected the “3” response, restricting the variability on this series of items. Hence, we elected to create a binary variable for each spouse representing that childcare was fair to the wife. This was accomplished by coding the variable 1 for wives if none of their responses suggested she did more than her fair share on the nine tasks, and 0 otherwise. Similarly, we coded the variable 1 for husbands if none of their responses suggested he did less than his fair share on the nine tasks, and 0 otherwise. Using this measure, the emphasis in the study will be on understanding the conditions under which childcare is seen as fair to wives.

Focal predictors. Explanatory variable measures were either contemporaneous with the outcome measures or lagged by one wave, where it was feasible to do so. Where we had both husband and wife versions of variables these were either kept separate or averaged, depending on the nature of the experience reported on. For joint experiences (e.g. the baby's temperament) or for cases in which there were husband and wife reports of each spouses' behavior (e.g. each spouse's contribution to childcare) we averaged husband and wife reports. For individual-level experiences (e.g. each spouse's depression) we employed each spouse's individual measure in the analysis. The prime explanatory variables pertained to fathers' relative contributions to various dimensions of family "sustenance." These are included as ratios or logged ratios in accord with the notion of "compensatory contributions" outlined above. In each case they represent the ratio of the husband's to the wife's contribution in the particular domain (if necessary, one-half was added to the numerator and denominator when creating the ratio to prevent undefined ratios or undefined logs). The childcare ratio, the housework ratio, and the paid labor ratio were logged to be consistent with prior work (DeMaris, 2007; DeMaris, Mahoney, & Pargament, 2011). The daily frequency of childcare was assessed with husband and wife reports of the daily frequency of each spouse's performance of the nine childcare tasks enumerated above. There were two scales for each spouse—one based on self-report and one based on the spouse's report. We first averaged the two reports concerning a given spouse's childcare effort to create husband's childcare frequency and wife's childcare frequency. We then formed the logged ratio of husband's to wife's daily childcare labor as the logged ratio of these variables. This factor is called *childcare ratio*. This factor could not be lagged as it was measured in waves 2 – 4, when the outcome measures were also collected. The log of the ratio of husband's to wife's weekly hours spent in paid labor was the *paid labor ratio*. Additionally, each

spouse was asked to indicate the approximate number of hours per week they spent doing each of nine household tasks, such as “preparing meals,” or “outdoor and other household maintenance tasks.” The logged ratio of husband’s to wife’s weekly hours in these tasks is the *housework ratio*. Neither of these last two ratios was lagged because it was reasoned that it would be the contemporary arrangement of these duties that would affect perceived fairness of childcare, not the arrangement that obtained in a previous wave. The last two ratios tapped equity in the sexual domain. The *sexual satisfaction ratio* was based on each spouse’s reports of his or her satisfaction with the couple’s sexual relationship on a scale from 1 (extremely dissatisfied) to 7 (extremely satisfied). The *sexual intimacy ratio* was based on five questions asked of each spouse regarding their ease of relating to each other sexually (e.g. “I feel comfortable when my partner initiates sex with me”). Reliabilities for the sexual intimacy scales for husbands and wives ranged from .54 – .72 across the four waves of the study. Both of these sexuality ratios were lagged by one wave in the analyses.

Moderating variables. The variables that might condition the impact of husbands’ relative contributions to the marriage on the perception of equity were religiosity, marital quality, intendedness of the pregnancy, infant fussiness, and having a son. Religiosity was tapped with scales referencing religious experience connected, in particular, with parenting. *Wife’s sanctification* and *Husband’s sanctification* were based on items tapping the theistic (e.g. “God played a role in our getting pregnant/our baby coming into my life”) and nontheistic (e.g. “This pregnancy/my baby seems like a miracle to me”) sanctification of pregnancy. Reliabilities for each type of sanctification scale ranged from .97 – .98 and .91 – .94, respectively, across waves. For the current analysis, we used only the wave 1 sanctification score for each spouse, which was the average of each type of sanctification. Marital quality was assessed with separate scales for

husbands and wives. The first measures were the love subscales from Braiker and Kelley (1979). Each is a 10-item scale (representative item: “To what extent do you love your spouse at this stage?”). Responses to each item ranged from 1 (*not at all*) to 9 (*very much*). Reliabilities ranged from .77 to .90 across waves. These measures were lagged by one wave in the analyses. (Descriptive statistics for the love scales are not shown in the table below, as these were not retained in final models.) A second marital quality measure connected to parenting consisted of measures of the quality of the coparenting relationship. These were tapped using the 10-item coparenting solidarity subscale proposed by Van Egeren and Hawkins (2004). A sample item is “Parenting has brought my spouse and me closer together.” Responses to each item were coded 1 (strongly disagree) to 5 (strongly agree). Husband’s and wife’s scale scores were averaged to create one scale with reliabilities of .70 to .81 across waves. As with the childcare ratio, this measure could not be lagged. Intendedness of the pregnancy was captured with a wave 1 dummy variable, *unintended pregnancy*, coded 1 if both spouses agreed that the pregnancy was unwanted or occurred sooner than was planned, and 0 otherwise. The baby’s temperament was assessed based on husband’s and wife’s responses to the scale of infant fussiness developed by Bates, Freeland, and Lounsbury (1979), with reliabilities ranging from .79 to .84 across study waves. *Child fussiness* was the average of husband’s and wife’s scale scores and was not lagged in the analysis. Finally, a dummy variable, *male child*, was employed to indicate that the couple’s infant was a son.

Control variables. Demographic controls were household income in thousands of dollars, and the average age of spouses. We also controlled for other factors that could influence perceptions of fairness in order to prevent bias due to unmeasured heterogeneity. Depressive symptomatology of each spouse was measured with a 10-item version of the Center for

Epidemiological Studies Depression Scale (Radloff, 1977). The items ask about the frequency of depressive symptoms experienced in the past week. A representative symptom was “I was bothered by things that don’t usually bother me.” Responses to each item ranged from 0 (“rarely or none of the time [less than one day]”) to 3 (“all of the time [five to seven days]”). Alpha reliability was .71 –.79 across study waves. These measures were lagged by one wave.

Husband’s and wife’s relative advantage are scales reflecting a sense of subjective overbenefit taken from wave 1 of the study. Higher scores indicate greater overbenefit while lower scores reflect a sense of underbenefit (see DeMaris et al., 2010, for details of the construction of these scales). Alpha reliabilities were .54 for wives and .62 for husbands. Finally, husband’s and wife’s sex-role traditionalism were each tapped via the 20-item scale developed by Bird, Bird, and Scruggs (1984). A representative item is “A married woman’s most important task in life should be caring for her husband and children.” Response categories ranged from 1 (“strongly disagree”) to 7 (“strongly agree”). Reliabilities were .87 for wives and .85 for husbands. These measures were only available from wave 4 of the study.

Statistical Analysis

The statistical model employed is an adaptation of the multilevel dyadic-discrepancy model (Barnett, Raudenbush, Brennan, Pleck, & Marshall, 1995; Lyons, Zarit, Sayer, & Whitlatch, 2002) to the scenario in which the response is a binary variable. If we let O_{it} represent the odds that childcare is perceived as fair to the wife, then the level 1 model is:

$$\ln(O_{it}) = P_{01} + P_1 \text{Time}_{it} + P_2 \text{Gender Gap}_{it},$$

Where $\text{Gender Gap}_{it} = -.5$ for husbands and $+.5$ for wives. Hence, the equation for wives is

$$\ln(O_{itw}) = P_{01} + P_1 \text{Time}_{it} + .5 P_2, \quad (1)$$

And the equation for husbands is

$$\ln(O_{ith}) = P_0 + P_1 \text{Time}_{it} - .5 P_2. \quad (2)$$

Differencing his and her equations results in:

$$\ln(O_{itw}) - \ln(O_{ith}) = P_2.$$

By rules of logarithms we have that

$$P_2 = \ln\left(\frac{O_{itw}}{O_{ith}}\right),$$

that is, P_2 is the log-odds ratio for wives vs. husbands in perceiving childcare as fair to her.

Moreover, if we average Equations (1) and (2) we obtain:

$$\frac{\ln(O_{itw}) + \ln(O_{ith})}{2} = P_0 + P_1 \text{Time}_{it},$$

which, again by rules of logarithms equals

$$\ln(O_{itw} \times O_{ith})^{.5} = P_0 + P_1 \text{Time}_{it},$$

where the left-hand side of this last equation is the logarithm of the geometric mean of his and her odds of perceiving fairness to her. In sum, the model allows us to examine the effects of predictors on both the “average” (i.e., log geometric mean) perception of fairness for partners to a couple as well as the size of the gender gap in that perception. Additionally, by interacting other factors with the Gender Gap variable, we can examine which factors affect the gender gap in perceptions itself. The model being estimated here is a population-averaged logistic regression model. That is, the parameter estimates are for the effects of covariates on the population average response, rather than the response for a particular couple. Hence, there are no random growth parameters in the model; all coefficients are assumed to be fixed over couples. As a consequence, there is no need (nor is it possible) to create parallel measures of the response variable for each spouse, as is done in other studies (e.g. DeMaris, et al., 2011). Parameters were estimated via the technique of generalized estimating equations (GEE). GEE is the logistic

regression analog of generalized least squares (GLS). That is, it adjusts for the dependence of responses across time periods and spouses taken from the same couple. These estimates are consistent, provided that the mean response is correctly modeled, and their sampling distributions are asymptotically normal. Model-based standard errors are utilized in the multiple imputation procedure. These yield best standard error estimates provided that the estimated error covariance structure is close to the true one (Fitzmaurice, Laird, & Ware, 2004).

Results

Univariate Findings

Table 1 presents descriptive statistics on all study variables. Across gender and time period, about 30% of couples report childcare as being fair to the wife. This number, however, masks considerable heterogeneity by gender. The percent of wives vs. husbands saying that the division of childcare responsibilities is at least fair to her across waves 2 – 4 is, respectively, 36 vs. 16.5 (wave 2), 38.7 vs. 19.5 (wave 3), and 40.5 vs. 26.4 (wave 4; numbers not shown). In each case, wives are significantly more likely to report that childcare is, at the least, not unfair to her (established using McNemar’s tests). Moreover as the above numbers attest, the perception that childcare is fair to the wife becomes proportionately greater over time for both spouses as the infant develops.

[Table 1 about here]

Among the within-subjects predictors it is evident that the average childcare and housework logged ratios are negative, suggesting, not surprisingly, that wives are performing the larger share of each type of task. Conversely, the logged paid labor ratio is positive, indicating husbands’ greater paid labor contribution. Sexual satisfaction and intimacy ratios hover around parity, with a slight advantage going to husbands. Means for child fussiness, coparenting

solidarity, and depression are all relatively favorable numbers, suggesting a well-adjusted sample of young parents. Notable among the between-subjects factors is that fully 49% of pregnancies were unplanned, a number that agrees very closely with findings for the nation as a whole (Nelson & O'Brien, 2012). Fifty-two percent of the infants in the current sample are sons.

Multivariate Findings

Multivariate results are shown in Table 2. Initial plots of logged odds of childcare fairness (to the wife) by time (not shown) revealed a very linear trend. Therefore, the effect of passing time was modeled as a purely linear function and is shown in Model 1, along with the gender gap in fairness perceptions. The model intercept suggests that the initial (i.e. wave 2) average odds of childcare fairness across spouses is $\exp(-1.052) = .349$, which translates into a probability of .26. Net of spouse's gender, there is a significant increasing trend in the perception that childcare is fair over time, as attested to by the positive slope for time (.038). At any given time, there is also a significant gender gap in that perception, with wives' odds of reporting fairness to themselves being $\exp(.877) = 2.4$ times greater than husbands'.

[Table 2 about here]

Model 2 adds all of the rest of the within-subjects predictors to the analysis. As is evident, controlling for other factors, the husband's relative contribution to childcare has a very significant positive effect on average perceptions that childcare is fair to her. Net of those contributions, however, his relative contribution to paid labor also enhances the perception of fairness in childcare. The significant and negative effect of the sexual intimacy ratio suggests that the greater the quality of his sexual intimacy, compared to hers, the lower the average perception of fairness in childcare. Both child fussiness and the husband's—but not the wife's—depressive symptomatology are associated with a lower odds that childcare is perceived to be fair

to her.

Model 3 adds the between-subjects predictors to the prediction of childcare fairness. In this model, the positive effect of passing time is now completely accounted for, as this term is no longer significant. There is still a very significant gender gap in perceptions of fairness, with, again, wives more likely than husbands to report this, controlling for covariates. In this model, husbands' relative contributions to both paid labor and to housework have marginally significant positive effects on fairness perceptions. Significant effects of other covariates are unchanged from Model 2 except that husbands' depression now only has a marginally significant effect on fairness. Of the between-subjects factors themselves, an unintended pregnancy lowers the perception of childcare fairness, as does the husband's wave 1 perceived relative advantage in the marriage and sanctification. On the other hand, the average perception of fairness is greater when the wife reports greater relative advantage and is higher in sex-role traditionalism. Child gender, per se, apparently has no effect on perceptions of childcare fairness net of other covariates.

Model 4 adds two interaction effects to the analysis. The first pertains to husbands' relative contribution to childcare (the childcare ratio). The significant interaction term implies that the effect of the gender gap (or, the size of the gender gap in fairness perceptions) is $.396 - 1.072 \times \text{childcare ratio}$. That the first term is nonsignificant suggests that when the childcare ratio is at parity—his daily frequency of childcare is exactly the same as hers—the gender gap in fairness perceptions is insignificant. However, the less he does of childcare relative to her, the greater this gap grows. For example, at a standard deviation below parity, the gender gap is .93 and very significant ($p < .0001$, not shown; established using targeted centering and multiple imputation to test the centered coefficient). That is, when he does substantially less childcare

than she does, she is significantly more likely to see childcare as fair to her than he is. The other interaction term pertains to the effect of child gender on his relative contributions to childcare. There are two ways to understand this significant interaction effect. The first is to consider the effect of a male child: $.677 + .917 \times \text{childcare ratio}$. As both terms are significant, this means that average spousal perception of childcare as fair to her is greater if the infant is a boy and this effect gets stronger the greater his contribution to childcare. The second perspective on the interaction effect is revealed by considering the effect of the husband's relative contribution to childcare: $.611 - 1.072 \times \text{Gender Gap} + .917 \times \text{Male Child}$. We note that this effect depends on spouse's gender (due to the inclusion of the Gender Gap variable). If his and her perceptions are averaged, the effect becomes $.611 + .917 \times \text{Male Child}$. Hence, the effect on fairness perceptions of his relative contribution to childcare is significant and positive if the child is a girl, but becomes considerably stronger if the child is a boy. In the latter case, the effect is $.611 + .917 = 1.528$, which is very significant ($p < .0001$, not shown; established using targeted centering and multiple imputation to test the centered coefficient). In other words, his contribution to childcare has a significantly stronger effect on fairness perceptions when the child is a boy rather than a girl. This final model accounts for about 19% of the variation in fairness perceptions across couples, spouse's gender, and measurement occasions.

Several other effects were tested and, contrary to our hypotheses, were found to be nonsignificant, and so have been left out of final models. His and her relative advantage measures were scored monotonically such that higher values indicated greater relative advantage compared to the spouse. As equity theory would predict a nonlinear relationship between relative advantage and the perception of fairness, we added spline functions to the analysis to capture such a trend. However, both spline terms were nonsignificant. Following our moderation

hypotheses, we examined several possible moderators of the gender gap in fairness perceptions. Neither the main nor the interaction effects of love for the spouse were significant. Also nonsignificant were interactions between the gender gap and child fussiness, coparenting solidarity, spousal depression, sanctification, sex role traditionalism, unintendedness of the pregnancy, or any of the contribution ratios (for housework, paid work, sexual satisfaction, and sexual intimacy).

Discussion

This paper has addressed a number of issues concerning the perception of fairness in childcare among first-time parents. And a number of the findings help to illuminate the ways in which equity theory contributes to our understanding of this topic. First, in concert with results from previous studies (Grote & Clark, 1998; Grote et al., 2002), we find that wives are more likely than husbands to believe that the division of childcare responsibilities is fair to the wife. This is in contrast to the division of labor in housework, in which husbands are more likely than wives to report that housework is fairly apportioned (Gager & Hohmann-Marriott, 2006). Given society's current emphasis on the importance of father involvement with children, there is considerable pressure on modern fathers to match mothers in this area. As they always "fall short" in this domain compared to mothers, however (DeMaris et al., 2011), they are more likely than mothers to feel that mothers are unfairly burdened with childcare responsibilities.

Consistent with hypothesis, the more fathers contribute to childcare relative to mothers' contributions, the more, on average, couples view childcare duties as fair to the mother. In terms of significance levels, in fact, this was the strongest effect in the model. This is not surprising. Given modern expectations that men should be equal partners in parenting (McGill, 2014), both spouses are likely especially sensitive to how much men are actually contributing in that domain.

On the other hand, consistent with our compensatory contributions hypotheses, men's contributions in other domains of the relationship can compensate somewhat for their deficiencies in contributions to childcare. In particular, net of their contributions to infant care, their efforts in paid labor and housework serve to enhance the likelihood that both spouses view the childcare distribution as fair. Moreover, the more that husbands benefit in the sexual arena vis a vis their wives, the less likely spouses see childcare as fairly distributed. These findings echo past work on compensatory contributions in marriage in which men's contributions to paid labor and child care and the couple's relative health status have been found to elevate perceptions of equity in marriage, controlling for their lower levels of contributions to housework (DeMaris, 2010; DeMaris & Longmore, 1996). Spouses apparently take account of the full panoply of tasks necessary to support the life of a family when judging whether the endeavors in a particular domain (e.g., housework, child care) are fairly apportioned.

Aside from men's relative contributions, several other factors affect whether childcare is perceived to be fair to wives. The fussier the infant, the lower the perception of fairness. More difficult infants are more stressful for mothers (Martorell & Bugental, 2006; Östberg & Hagekull, 2000), so it is not surprising that childcare is correspondingly seen as less fair for the spouse who spends more time with a difficult child. In a similar vein, an unplanned pregnancy substantially reduces the probability that childcare is seen as fair to the wife. Other work has documented the effect of unplanned pregnancies in elevating the stress level of a mother (Nelson & O'Brien, 2012). The husband's depression level also lowers the perception of fairness, possibly because his being perhaps visibly stressed detracts from the value of whatever his own childcare contribution is. On the other hand, not surprisingly, couples with more traditional wives tend to be more likely to view childcare as fair to the mother.

Consistent with hypothesis, we find that fathers' contributions to childcare have a stronger effect on the probability of perceiving fairness when the child is a son rather than a daughter. As fathers are expected to be more involved in the care and upbringing of sons than daughters (Fagan, 2014), it is likely that both parents are more cognizant of his efforts in this regard and respond accordingly. The other, unanticipated, interaction involved the gender gap in perceptions and fathers' contributions to childcare. In the event that both parents are contributing equally to childcare responsibilities, there is no significant gender gap in these perceptions. Both spouses have equal probabilities of regarding childcare tasks as fair to the wife. However, the less childcare performed by the husband, the greater this gender gap grows, such that wives become more and more likely than their husbands to view childcare as fairly apportioned. It seems that dads are especially sensitive to the greater role played by mothers in childcare, especially with infants. As a result they are not only more likely than women to regard childcare as unfair to the mother, but they are especially likely to do so when they are not contributing their share to that enterprise.

As with all studies, ours has a number of limitations that need to be kept in mind. First, the use of a targeted sample of couples in relatively short-duration and well-adjusted marriages precludes generalization of our results to all childbearing couples. Also, for practical reasons, we restricted our sample to heterosexual coparents, although we presume that similar kinds of processes would affect the perception of childcare fairness among same-sex coparents. Moreover, our study was limited to couples who married prior to the birth of both spouses' first biological child, which in recent years represent a declining portion of all childbearing liaisons (Cherlin, 2010). Such couples, like those in our sample, tend to be more affluent, well-educated, and likely to self-describe as Caucasian than unmarried and/or cohabiting coparents (Cherlin).

Future work in this area should be undertaken to see if the findings can be replicated using larger and more diverse samples. Some of our explanatory variables were also of questionable causal priority with respect to perceived fairness. Particularly problematic was the measure of sex-role traditionalism, which was only available in the wave 4 data. It is entirely possible that this measure is endogenous to fairness perceptions. For example, enjoying children and their care could lead wives both to perceive childcare as “fair,” and to be inclined to believe childcare and mothering are more natural skills of women—a traditional position. To clarify chronological ordering of variables we were able to lag several predictors such as spousal depression and marital quality. Nevertheless, other variables such as coparenting solidarity and infant fussiness could not be lagged; their causal priority to fairness perceptions is therefore more tenuous.

Overall, however, this study advances understanding of equity issues with respect to childbearing and childrearing beyond existing work. We extend previous findings from the housework domain and marshal evidence that similar processes are at work when it comes to children. Couples consider the overall context of their relationship and all the efforts that go into keeping a family intact and solvent when judging whether a particular endeavor—in this case, childcare responsibilities—is fairly apportioned. For any given ratio of his to her efforts in childcare, this activity is seen as more likely to be fair to the wife if the husband is also working more hours in paid labor, doing more housework, and benefiting *less* in their sexual relationship. His contributions in other domains of the relationship apparently compensate for what he might be lacking in sharing the childcare burden. Future work should be oriented toward extending this analysis to a more diverse population, such as cohabiting or same-sex couples, to see if the results are replicable in that context.

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Table 1

Descriptive Statistics for Study Variables

Variable	Range	<i>M</i>	<i>SD</i>
<i>Outcome Variable^a</i>			
Childcare fairness	0.000 – 1.000	0.296	0.457
<i>Within-Subjects Predictors^a</i>			
Childcare ratio	-2.694 – 0.525	-0.649	0.500
Paid Labor ratio	-4.615 – 5.081	1.362	2.162
Housework ratio	-3.761 – 2.177	-0.294	0.801
Sexual satisfaction ratio	0.200 – 6.000	1.041	0.520
Sexual intimacy ratio	0.438 – 3.333	1.071	0.341
Child fussiness	8.000 – 32.500	18.161	4.384
Coparenting solidarity	24.500 – 48.500	40.553	3.453
Husband's depression	0.000 – 19.000	5.540	3.563
Wife's depression	0.000 – 24.000	6.762	4.037
<i>Between-Subjects Predictors^b</i>			
Household income	12.500 – 150.000	63.552	30.375
Unintended pregnancy	0.000 – 1.000	0.489	0.501
Average spousal age	20.500 – 38.500	27.927	3.758
Wife's relative advantage	-6.603 – 13.635	0.000	2.935
Husband's relative advantage	-9.993 – 8.832	0.000	3.009

Wife's sanctification	11.000 – 70.000	52.500	14.307
Husband's sanctification	10.000 – 70.000	51.064	14.437
Wife's sex-role traditionalism	20.000 – 116.000	56.459	15.882
Husband's sex-role traditionalism	23.000 – 97.000	60.412	14.806
Male child	0.000 – 1.000	0.522	0.501

^a Based on maximum *N* of 1068 couple-periods.

^b Based on maximum *N* of 178 couples.

Table 2

Restricted Maximum Likelihood Coefficient Estimates (Standard Errors) for Linear Mixed-Effects Models of Childcare Fairness

Explanatory Variable	Model 1	Model 2	Model 3	Model 4
<i>Level 1 Fixed Effects</i>				
Intercept	-1.052*** (0.128)	0.463 (1.237)	-1.221 (1.672)	-1.919 (1.706)
Time	0.038** (0.014)	0.027† (0.016)	0.028 (0.017)	0.028 (0.017)
Gender gap	0.877*** (0.164)	0.921*** (0.178)	0.988*** (0.192)	0.396 (0.276)
Gender gap x childcare ratio				-1.072** (0.371)
Childcare ratio		0.777*** (0.211)	0.931*** (0.227)	0.611* (0.304)
Paid labor ratio		0.100* (0.044)	0.088† (0.046)	0.096* (0.047)

Housework ratio	0.166 (0.120)	0.231† (0.127)	0.210 (0.128)
Sexual satisfaction ratio	0.049 (0.151)	0.024 (0.153)	-0.006 (0.154)
Sexual intimacy ratio	-0.818** (0.288)	-0.780** (0.292)	-0.785** (0.295)
Child fussiness	-0.071*** (0.021)	-0.066** (0.022)	-0.067** (0.022)
Coparenting solidarity	0.031 (0.025)	0.021 (0.027)	0.025 (0.027)
Husband's depression	-0.051* (0.025)	-0.047† (0.025)	-0.049† (0.026)
Wife's depression	-0.003 (0.021)	-0.002 (0.022)	0.000 (0.023)

Level 2 Fixed Effects

Household income		-0.006 (0.005)	-0.006 (0.005)
Unintended pregnancy		-0.645** (0.232)	-0.651** (0.235)

Average spousal age			0.059 (0.036)	0.063† (0.037)
Wife's relative advantage			0.072† (0.040)	0.067† (0.041)
Husband's relative advantage			-0.066† (0.040)	-0.062 (0.040)
Wife's sanctification			0.007 (0.010)	0.008 (0.010)
Husband's sanctification			-0.021* (0.010)	-0.025* (0.010)
Wife's sex-role traditionalism			0.022* (0.009)	0.024** (0.009)
Husband's sex-role traditionalism			0.008 (0.009)	0.012 (0.009)
Male child			0.160 (0.220)	0.677* (0.325)
Male child x childcare ratio				0.917* (0.392)
$R^2_{y,\hat{y}}$	0.041	0.119	0.178	0.189

Note: $N = 978$ couple-periods.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.