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Equity Dynamics in the Perceived Fairness of Infant Care

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Abstract

How is the perceived fairness of infant care affected by spouses' relative contributions to it as well as to other domains of their relationship? Longitudinal data on 178 couples expecting the birth of their first child were collected over a period spanning approximately the first year of the child's life. Overall, wives were more likely than husbands to see infant care as fair to the wife. Net of fathers' contributions to infant care, spouses were more likely to see infant care as fair to wives the more the father worked in paid labor and did housework and the more wives benefited in the sexual relationship. Fathers' contributions to infant care had a stronger effect on fairness when the child was a son. The findings are consistent with equity predictions, in that fathers' compensatory contributions to other domains of marriage counterbalance an unequal workload in the arena of family work.

Keywords

equity theory; fairness perceptions; infants; infant care; longitudinal study; multilevel modeling

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 childcare, and, in particular, infant care (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; Thompson, 1991). 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, for example, 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 infant care.

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 infant care. (We use the term "childcare" interchangeably with infant care throughout the manuscript to avoid repetitiveness.) 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 infant care 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 infant care as well as the gender gap in justice perceptions. We begin by reviewing relevant theory.

THEORETICAL BACKGROUND

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. Time-diary evidence taken from separate surveys spanning the 1960s to the 1990s suggests that men's contributions to both housework and childcare have expanded in response to women's increased labor-force involvement. At the same time, women have cut back on their hours in family work, with the result that the gender gap in household labor has diminished (Bianchi 2011; Bianchi, Milkie, Sayer, & Robinson, 2000; Sayer, Bianchi, & Robinson, 2004). An extensive recent 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). 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. The occupations listed by the Bureau of Labor Statistics (2014) as having the highest fatal injury work rates are largely monopolized by males, with proportion female ranging from 23.8% (farmers, ranchers, and other agricultural managers) to less than 10% (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). Given these considerations, it may not be so mystifying that most couples see the division of domestic labor as fair. Despite women's greater involvement in family work, men's greater contributions to paid labor and perhaps their increasing investment in childcare may compensate.

The Wider Ecology of Marriage

Huston's (2000) discussion of the social ecology of marriage is informative regarding the wider context in which spouses may evaluate the fairness of their distribution of household labor. Marriage is a behavioral system embedded within a larger network of close relationships, which in turn is nested within the macrosociological context of society. As he notes, "Couples must garner economic resources, maintain a household, care for children (if they become parents), maintain connections with friends and relatives, and manage their joint and individual leisure time" (Huston, 2000, p. 301). Each spouse must make some contribution to the maintenance of this behavioral system. In summarizing couples' marriage profiles, Huston delineates various aspects of marriage to which such contributions pertain: role patterns (e.g., spouses' participation in housework and childcare), companionship (e.g., talking to each other, spending leisure time together), socioemotional patterns (e.g. the affection spouses show for each other, how often they express negativity, the frequency of sexual activity), and spouses' involvement with family and kin (e.g., spouses' time spent in recreation, conversation, and perhaps supportive endeavors with friends and family). This delineation is also echoed by Thompson (1991). She notes that "All of the following is

necessary family work: overseeing children and child care, managing emotions and tension, sustaining conversation and creating relationships, keeping kin relations and much more...” (Thompson, p. 190). The point is that sustaining a marriage and a family comes down to much more than just housework and childcare. It follows that couples are likely cognizant of each spouses’ efforts in this wider ecology of marriage when judging the fairness of the division of labor in a particular domain.

Equity Theory

What are the “rules” involved in judging whether the division of labor in any domain is “fair”? 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, et al.).

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).

Perceptions of Fairness in Family Labor

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). However, equity “spillover” has also been found in the sense that greater contributions to childcare enhance the perception of fairness in housework, especially for wives (DeMaris & Longmore; Milkie, Bianchi, Mattingly, & Robinson, 2002). In other words, contributions to childcare compensate for deficient efforts in housework. The reverse is also likely: contributions to housework make up for shortfalls in childcare. 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 infant care as fair to the wife.

H₂: The greater fathers’ relative contribution to housework, the greater the probability either spouse sees the division of infant care 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.

Some factors have been found to condition the effect of equity considerations on fairness perceptions. 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. Neff and Karney (2004) detail the effects of external stressors—i.e., stressors other than the marital relationship itself—on spousal perceptions about the partner. External stress, such as that precipitated by an unplanned pregnancy or a fussy infant, may spill over to affect spouses’ judgments within the relationship. As a consequence of stress, spouses experience more negative perceptions of

the marital relationship itself, including thinking that existing workload arrangements may be unfair (Neff & Karney). 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. Finally, 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 infant care 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 infant care as fair to the wife.

H₅: Fathers' relative contributions to infant care have a stronger effect on the perception that the division of labor regarding infant care 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 in preliminary analyses, we employed listwise deletion to include only the cases with valid data on study variables. 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, infant care fairness, was based on a series of questions about the fairness of the division of labor on each of nine different infant care 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 ranging from 1 (*I am doing less than my fair share*) to 5 (*I am doing more than my fair share*). 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 infant care 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. Although the final outcome measure is binary, it is based on an assessment of nine separate infant care tasks. Hence, each spouse has nine “opportunities” to recognize a sense in which the division of labor with respect to infant care is unfair to the wife. On the other hand, using this measure, the emphasis in the study will be on understanding the conditions under which infant care is seen as *fair* to wives. At the prompting of reviewers, we also conducted the analyses with a continuous version of the response. In particular, we summed the responses to the nine infant-care fairness items for each spouse. For wives, items were reverse scored before summing so that “I am doing less than my fair share” was the highest-coded value. This produced scales coded in the direction of maximal advantage to wives for both spouses. We then performed the same analyses as described below but using a slightly different statistical formulation designed for a continuous response (the linear mixed-effects model). All results described below were substantively the same when using the continuous version of the response. But several effects that were significant using the dichotomous response were not significant with the continuous response. The reason is that dichotomization is superior for highlighting a particular type of couple—one in which the woman is not overburdened with childcare tasks. Given contemporary concerns with gender egalitarianism in the family, we consider this type of couple to be of special interest (analyses using the continuous version of the response are available from the senior author on request).

Explanatory variables: categories—One cluster of explanatory variables pertained to fathers’ relative contributions to various dimensions of family “sustenance.” Available measures pertained to each spouses’ contributions to infant care, housework, paid labor, and the couples’ sexual relationship (sexual satisfaction and intimacy, in particular). A second set of key predictors consisted of those held to potentially moderate the effect of fathers’ relative contributions to infant care on the outcome. These included religiosity, marital quality (spousal love and coparenting quality, in particular), intendedness of the pregnancy, infant fussiness, and having a son. A third set of predictors was comprised of control

variables: household income, spouses' average age, spouses' depressive symptomatology, spouses' perceived relative advantage, and spouses' sex-role traditionalism scores.

Measurement issues—Two considerations guided our construction of measures. First, what was the optimal strategy for employing both spouses' reports of the same "event" in the analyses? Second, to what extent could explanatory variables be lagged by one wave in order to enhance confidence in their exogeneity with respect to the outcome? Regarding the first issue we define a couple event as an experience that is common to the couple (e.g., child fussiness) and an individual event as an experience that is particular to an individual (e.g., husband's depression). (See also Nomaguchi, Milkie, & Bianchi, 2005, for a similar distinction.) For couple events in which both spouses' reports of the same event were available, we averaged both spouses' responses to create one measure. This pertained to contributions to infant care, infant fussiness, and coparenting quality. In this case each spouse's report can be considered an imperfect measure of the same underlying reality. (In response to reviewer concerns we tested the equality of effects of each spouse's separate report on these measures using the technique described in Kenny, Kashy, & Cook, 2006. In no case was equality rejected, thereby justifying the averaging strategy empirically, in addition to theoretically.) Other phenomena that could be considered couple events, e.g., contributions to paid labor and housework, could not be subjected to an averaging strategy because only the relevant spouse's report was available. For individual events, such as sexual satisfaction and intimacy, spouses' depressive symptomatology, spouses' perceived relative advantage, spouses' religiosity, and spouses' sex-role traditionalism, we preserved each spouse's report as a separate measure in the analyses. Regarding the exogeneity issue, the following measures were lagged by one wave to establish temporal precedence: sexual satisfaction and intimacy measures, love for spouse, and husbands' and wives' depressive symptomatology. Measures of contributions to infant care, infant fussiness and coparenting quality could not be lagged as they were only measured contemporaneously with the outcome. Measures of contributions to housework and paid labor were purposefully not lagged. It was reasoned that it would be the contemporary arrangement of these duties that would affect the perceived fairness of infant care, not the arrangement that obtained in a previous wave. Sex-role traditionalism could not be lagged as it was taken from wave 4 of the study. All other measures were automatically lagged because they were taken from wave 1 of the study (i.e., before the birth).

Focal predictor measures—The daily frequency of infant care was assessed with husband and wife reports of the daily frequency of each spouse's performance of the nine infant care tasks enumerated above (see *Outcome variable*). 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*. 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*. The preceding three ratios were all logged to be consistent with their treatment in prior work (DeMaris, 2007; DeMaris, Mahoney, & Pargament, 2011). 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 items from the 14-item Intimacy Safety Questionnaire (ISQ; adapted from Cordova, Gee, & Warren, 2005). Sample items included "I feel comfortable when my partner initiates sex with me" and "I feel comfortable telling my partner my likes and dislikes while we are making love." Response options ranged from 0 (*never*) to 4 (*always*). Prior research on the full scale reported good internal reliability for both men and women (Cordova, Scott, Morian, Mirgain, Yaeger, & Groot, 2005). Reliabilities for the sexual intimacy scales in the current study for husbands and wives ranged from .54 – .72 across the four waves of the study.

Moderating variables—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. (Descriptive statistics for the love scales are not shown in the table below, as these were not retained in final models; they are, however discussed in the context of ancillary analyses.) 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. 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. 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. 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.

Statistical Analysis

The statistical model employed is the senior author's 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. Intuitively, the idea is as follows. We pool the observations across spouses and across time periods. That is, each couple contributes six records to a person-period dataset, one for each spouse for each of the three later time periods (waves 2, 3 and 4) under study. The dichotomous response, infant-care fairness, is then regressed on the predictor set using logistic regression. Among the model predictors is a variable “gender gap” that captures the ratio of her to his odds that infant care is perceived to be fair to the wife. If this effect is positive, then she's more likely to see infant care as fair to her than he is. If it's negative, he is the one more likely to perceive infant care as fair to her. The model allows us to discern how explanatory variables affect the average (over spouses) probability that infant care is perceived as fair to the wife as well as the gender gap in spouses' perceptions of fairness. The interdependence between husbands and wives is addressed in the model's error structure, via parameters that allow equation errors for spouses in the same couple to be correlated across partners as well as across time (Fitzmaurice, Laird, & Ware, 2004).

In technical terms, if we let O_{it} represent the odds that infant care 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 infant care 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 infant care 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 infant care 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 infant care is, at the least, not unfair to her (established using McNemar's tests). Moreover as the above numbers attest, the perception that infant care is fair to the wife becomes proportionately greater over time for both spouses as the infant develops.

Among the within-subjects predictors it is evident that the average infant care 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. 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 infant care 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 infant care 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 infant care 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'.

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 infant care 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 infant care. 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 infant care is perceived to be fair to her.

Model 3 adds the between-subjects factors to the prediction of infant care 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 infant care 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 infant care (the infant care ratio). The significant interaction term implies that the effect of the gender gap (or, the size of the gender gap in fairness perceptions) is $.396 - 1.072 \times \text{infant care ratio}$. That the first term is nonsignificant suggests that when the childcare ratio is at parity—his daily frequency of infant care is exactly the same as hers—the gender gap in fairness perceptions is nonsignificant. However, the less he does of infant care 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 infant care 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 infant care. There are two ways to understand this significant interaction effect. The first is to consider the effect of a male child: $.677 + .917 \times \text{infant care ratio}$. As both terms are significant, this means that average spousal perception of infant care 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 infant care: $.611 - 1.072 \times \text{Gender Gap} + .917 \times \text{Male Child}$. 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 infant care 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 infant care has a significantly stronger positive 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 examined spouses' perceptions regarding the fairness of infant care from the perspective of the wider ecology of marriage (Huston, 2000). Drawing on equity theory, and in particular, the notion of compensatory contributions, we consider how fathers' efforts in a number of other marital domains might affect perceptions of the fairness of the couple's division of labor in infant care. This perspective acknowledges that spouses do not merely keep track of tit-for-tat exchanges in the realm of family work when judging whether their relationships are equitable. Rather they are cognizant of each partner's contributions to the full panoply of tasks that sustain a family when making such judgments. In addition to housework and childcare, such tasks can include working for pay, maintaining social relations with friends and family, exercising stewardship over the family's leisure time, and relating to each other as confidantes and lovers. We contend that a father's deficient effort in a given arena, e.g. infant care, may be compensated by extra effort in another family domain, such as paid work.

Our contentions are supported to some extent. Certainly fathers' relative contributions to infant care had the strongest effect on perceptions of fairness of any factors in the models. However, controlling for these, fathers' contributions to both paid labor and to housework also enhanced the likelihood that both spouses viewed infant care as fairly distributed. Additionally, the more that husbands benefited in sexual intimacy vis a vis their wives, the less likely spouses saw infant care as fair to wives. These findings echo previous research showing that compensatory contributions can make up for a lack of effort in housework when spouses judge the fairness of the household division of labor (DeMaris, 2010; DeMaris & Longmore, 1996). Spouses apparently take account of a multitude 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 to the family, 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). And stress spillover can cloud perceptions of

the marital relationship itself, including whether or not tasks are equitably allocated (Neff & Karney, 2004). 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 found 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 convenience 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. As suggested by a reviewer, the measure of childcare fairness may also have entailed an inherent shortcoming. Because couples were asked repeatedly (in waves 2 – 4) to report on their perceptions in this matter, they may have become more sensitized to the fairness issue over time. This could have affected their behaviors, such that they endeavored to allocate infant care more fairly as a result. Or it may have simply motivated them to

respond in a more socially acceptable manner—saying that yes, tasks were fair—over time. We have no data with which to judge this possibility. However, it is less likely that such a heightened awareness of the fairness issue would have altered the nature of the associations between fairness and the model predictors.

In sum, our study contributes to the stream of research on equity in family work. It also assists in framing the larger discussion surrounding the stalled gender revolution (Milkie, et al., 2002; Raley, Bianchi, & Wang, 2012). One reviewer suggested that there is a tension between the perception that household work is equitable and the limitations placed on women by the fact that most household work ends up being done by women. Even though such unions are seen to be fair at the micro level, they reinforce women's inequality at the macro level. Indeed, due to women's adjusting their work schedules to accommodate childrearing, having children is associated with a fairly heavy career and wage penalty over the long run (Bertrand, Goldin, & Katz, 2010). Having children and letting one's career take a back seat to children and family is, of course, a choice that many women make. Some scholars (Hakim 1996, 2003) maintain that anywhere from 10% to 30% of women, depending upon the nation surveyed, are home or family centered. After marriage, they prefer to give priority to home and family life over market work. Among women at the lowest rungs of the socioeconomic ladder, the possibility of a meaningful career is remote. They find the role of motherhood and taking care of children to be the most meaningful activity in their lives (Edin & Kefalas, 2005). Another reviewer pointed out, however, that women's choices are not necessarily exogenous to macrostructural constraints. And many of these constraints are imposed by the culture. In America, it is seen as “natural” that women will be the ones to sacrifice their careers for the good of children, because mothers’ time with children is more important than fathers’ time (Gornick & Meyers, 2008; Presser, 1995). As long as having and raising children is held to be more central to women's than men's identities, women will remain more likely than men to sacrifice career for family, contributing to gender inequality at the macro level. Whether the role of father will ever take on such centrality in men's lives remains to be seen. Until it does, the gender revolution will, in all likelihood, fail to be complete. Future work could profit from assessing not only whether household work is perceived as equitably distributed, but also the degree to which these perceptions are further colored by men's vs. women's orientations toward career as opposed to family. In so doing, perhaps we can gain a better understanding of the nature of the tradeoffs women and men are making to balance career and family concerns.

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Table 1

Descriptive Statistics for Study Variables

Variable	Range	<i>M</i>	<i>SD</i>
<i>Outcome Variable^a</i>			
Infant care fairness	0.000 – 1.000	0.296	0.457
<i>Within-Subjects Predictors^a</i>			
Infant care 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

^aBased on maximum *N* of 1068 couple-periods.

^bBased on maximum *N* of 178 couples.

Table 2
Generalized Estimating Equations Estimates (Standard Errors) for Logistic Regression Models of Infant Care 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 × infant care ratio				-1.072** (0.371)
Infant care 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)
<i>Level 2 Fixed Effects</i>				
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)

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Explanatory Variable	Model 1	Model 2	Model 3	Model 4
Male child			0.160 (0.220)	0.677* (0.325)
Male child × infant care ratio				0.917* (0.392)
$R^2_{y,\hat{y}}$	.041	.119	.178	.189

Note: $N = 978$ couple-periods.

$\dagger$ $p < .10$.

* $p < .05$.

** $p < .01$.

*** $p < .001$.