



*Citation for published version:*

Cooke, LP 2007, 'Persistent policy effects on gender equity in the home: the division of domestic tasks in reunified Germany', *Journal of Marriage and Family*, vol. 69, no. 4, pp. 930-950. <https://doi.org/10.1111/j.1741-3737.2007.00422.x>

*DOI:*

[10.1111/j.1741-3737.2007.00422.x](https://doi.org/10.1111/j.1741-3737.2007.00422.x)

*Publication date:*

2007

*Document Version*

Peer reviewed version

[Link to publication](#)

The definitive version is available from <http://onlinelibrary.wiley.com/>

## University of Bath

### Alternative formats

If you require this document in an alternative format, please contact:  
[openaccess@bath.ac.uk](mailto:openaccess@bath.ac.uk)

#### General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

#### Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

## Persistent Policy Effects on the Division of Domestic Tasks in Reunified Germany

*Running head:* Division of Domestic Tasks in Reunified Germany

Dr. Lynn Prince Cooke  
School of Social Policy, Sociology and Social Research  
Cornwallis Building NE  
University of Kent  
Canterbury CT2 7NF  
United Kingdom  
+44(0)1227 823 624 phone  
+44(0)1227 827 005 fax  
L.P.Cooke@kent.ac.uk

**Forthcoming:** *Journal of Marriage and Family*

*Acknowledgements:* The paper benefited from feedback at a seminar hosted at the Max Planck Institute for Human Development in Berlin, May 2005, presentation at the American Sociological Association Annual Meeting in Montreal, August 11-14, 2006, and detailed comments from Marina Adler, Myra Marx Ferree, and three anonymous *JMF* reviewers. Many thanks as well to Silke Meyer for timely and thorough research assistance, and Heike Trappe for sharing German employment data.

© 2007, Lynn Prince Cooke. All rights reserved. This paper is for the reader's personal use only. This paper may not be quoted, reproduced, distributed, transmitted or retransmitted, performed, displayed, downloaded, or adapted in any medium for any purpose, including, without limitations, teaching purposes, without the Author's express written permission. Permission requests should be directed to [L.P.Cooke@kent.ac.uk](mailto:L.P.Cooke@kent.ac.uk)

## Persistent Policy Effects on the Division of Domestic Tasks in Reunified Germany

We are only beginning to unravel the mechanisms by which the division of domestic tasks varies in its sociopolitical context. Selecting couples from the German SocioEconomic Panel that married between 1990 and 1995 in the former East and West regions of Germany and following them until 2000 ( $N = 348$  couples), I find evidence of direct, interaction, and contextual effects predicting husbands' hours in and share of household tasks, but not childcare. East German men perform a greater share of household tasks than West German men after controlling for individual attributes and regional factors. Childcare remains more gendered, and the first child's age proves the most important predictor of fathers' involvement. These findings further our understanding of how the state shapes gender equity in the home.

*Key words:* cross-national comparative; division of labor; housework; longitudinal analysis

## Persistent Policy Effects on the Division of Domestic Tasks in Reunified Germany

The private sphere of the household nests within broader sociopolitical institutions, but only recently have analyses compared the division of domestic tasks across countries. Earlier analyses found no cross-country differences in men's domestic share once controlling for individual variables (Baxter, 1997; Kalleberg & Rosenfeld, 1990). More recent analyses found not only modest cross-national variation (Batalova & Cohen, 2002; Davis & Greenstein, 2004), but also interaction effects between individual variables and contextual measures attributable to the policy environment (Fuwa, 2004; Geist, 2005; Hook, 2006). This evidence suggests policies not only alter women's level of individual resources, but also women's aggregate level of these resources alters the effect of individual resources on couple negotiations. Breen and Cooke (2005) argue this occurs because the larger the proportion of economically autonomous women in a society, the more likely men as a group will believe and act upon the belief that more sharing of domestic tasks is necessary for successful marriages.

These studies, however, share similar limitations. All are based on cross-sectional data, whereas women's time in paid and unpaid labor varies across union status as well as the marital life course, making panel data more suitable (Gupta, 1999; Kalleberg & Rosenfeld, 1990). Cross-sectional data also exclude information from couples divorcing prior to the year of survey, potentially overlooking information on almost half of the first-married population. The surveys all use a single respondent for information about the entire household, with results varying with the gender of the respondent. Many studies show women and men overestimate their own domestic hours (Coltrane, 2000) and Lee (2005) finds that women might underestimate men's. Consequently, greater accuracy comes from getting information from each person in a couple, particularly when comparing relative shares. The studies also only compare the division of household tasks, which might include some care activities, but none compares couple negotiation of childcare with other domestic tasks. Finally, although some use statistical techniques to account for unmeasured national differences (Batalova & Cohen, 2003; Fuwa, 2004; Hook, 2006), these cannot differentiate between policy and cultural effects.

Here I extend our understanding of policy effects on the household division of labor by using better data, employing a natural country experiment to differentiate policy from unmeasured cultural effects, comparing the husbands' hours in and share of household tasks

as well as childcare, and examining the persistence of policy effects on gender relations after the policies themselves have changed. I use the longitudinal German SocioEconomic Panel data to compare first-married couples' divisions of household tasks and childcare across the former East and West Germany during the 1990s. These two regions provide a natural experiment for differentiating between cultural and policy effects because they are comprised of people who shared a common cultural past but were nondemocratically subjected to radically different policies after World War II. West Germany put in place policies supporting women's responsibility for the home and her economic reliance on a male breadwinner whereas East Germany adopted a Stalinist constitution expecting and supporting women's employment with a web of public services and related policies. Time diary data from the 1960s reveal the division of domestic tasks more egalitarian in all socialist countries at that time, and in East Germany as compared with West Germany (Hook, 2006).

Now the two regions are reunified under the West German state. If what matters is the immediate policy context, the division of domestic tasks should now be similar across the regions, varying only in the degree to which previous policy may have altered individual levels of relative resources such as educational attainment (Baxter, 1997). To the extent the divergent policy paths fundamentally rather than temporally alter relative gender power as argued by Breen and Cooke, then a more egalitarian division of domestic tasks should remain among East couples once controlling for individual resources. As East Germany provided state support for the care of children and regional differences in this persist, the household division of childcare is also compared across the two regions. Ascertaining whether effects prevail under a shifting policy environment provides an important extension to our understanding of how the state shapes, rather than simply reflects, societal gender relations.

#### PREDICTING THE DIVISION OF DOMESTIC LABOR

Relative power or resources, time availability, and the gender perspective dominate analyses of the household division of labor. Time availability and relative resource models predict women's rising employment should have led to a revolution in the domestic roles of women and men. Most empirical evidence from the United States suggests that relative resources predict some shift in the division of household tasks, but not enough to indicate an even exchange of paid for unpaid work (Goldscheider & Waite, 1991; Shelton & John, 1996). As to time availability, men's domestic hours across industrialized countries increased modestly since 1960, but not sufficiently to countermand women's increase in work hours (Bianchi et al., 2000; Gershuny, 2000; Sullivan, 2006). U.S. men assume more tasks if they

work different shifts from their wives (Presser, 1994), but in many countries the observed increase in men's *share* of domestic tasks over the past 40 years results from women's reduction in their own housework (Bianchi et al., 2000; Sullivan, 2006).

So the revolution in the gendered division of domestic tasks predicted by women's rising employment failed to occur. Controlling for employment or earnings, U.S. women increase their housework hours when partnered with a man whereas men decrease their hours when partnered with a woman, with the change most acute when children are present (Gupta, 1999; South & Spitze, 1994). Evidence from Australia (Bittman et al., 2003) and the United States (Brines, 1994; Fenstermaker Berk, 1985; Greenstein, 2000; Hochschild, 1989) also reveals that as a woman's earnings exceed those of the man, she takes on a greater rather than lesser share of housework as predicted by relative resource or time availability models. These dynamics support the gender perspective: A gendered division of labor does not reflect simple exchanges of relative resources or time, but is a symbolic expression of gender difference that produces and reproduces gender hierarchies (Fenstermaker Berk, 1985; Ferree, 1990; West & Zimmerman, 1987). These gendered hierarchies vary in context and across countries, reflecting gender regimes (Connell, 1987) or cultures (Pfau-Effinger, 1998).

Only recently have studies explicitly compared how the gendered division of labor at the family level varies with the sociopolitical structure in which it is negotiated. The earliest comparative work reported little cross-country variation in either the gendered division of housework or the effects of relative resources, time availability, and gender ideology on altering it (Baxter, 1997, comparing Australia, Canada, Norway, Sweden, and the United States; Kalleberg & Rosenfeld, 1990, comparing Canada, Norway, Sweden, and the United States). Baxter (1997) concluded that any gains in gender equality in the home would result from women's greater access to individual resources.

In contrast, Davis and Greenstein (2004) used data from 13 advanced industrial as well as transitional economies in the International Social Justice Project and found that after controlling for individual attributes, indicator variables for each of the countries predicted statistically significant variation in the division of household tasks such as cooking, laundry, and cleaning. More egalitarian divisions occurred in some, but not all, of the former socialist countries and the most gendered division in Japan. They offer that the contradictory results for the former socialist countries might reflect the degree to which citizens responded to political change by reinforcing gender stereotypes in the home, but they did not speculate why this might occur in only some of these countries.

Using the United Nations' Gender Empowerment Measure, 22 industrial and transitional countries in the 1994 International Social Survey Program, and hierarchical linear modeling, Batalova and Cohen (2002) and Fuwa (2004) found that the Gender Empowerment Measure predicted systematic differences in the division of female household tasks once controlling for individual variables. The Gender Empowerment Measure captures the percent of parliamentary seats held by women; the percent of women in administrative, managerial, and professional or technical positions; and women's share of earnings income, factors directly attributable to the gendered extent of national policy regimes (Orloff, 1993). In all countries, women retained primary responsibility for laundry, shopping, deciding what to have for dinner, and tending to sick family members. Batalova and Cohen found that couples' premarital cohabitation predicted a more egalitarian division of these tasks. Once controlling for this individual-level experience, a country's overall cohabitation rate and the Gender Empowerment Measure also predicted the division of household tasks within married couples. Yet again, inconsistencies emerge. Eastern European countries with high historical cohabitation rates did not have as egalitarian divisions of household tasks as these rates should predict.

Using the same data and technique, Fuwa (2004) found interaction effects between the Gender Empowerment Measure and individual resources. Time availability and gender ideology effects proved stronger or weaker for women in more versus less egalitarian countries, respectively, although the substantive differences were quite modest and inconsistencies persisted. With most former socialist regimes, time availability had weaker effects than predicted by their Gender Empowerment Measure, whereas liberal regimes such as Britain and Australia showed stronger effects of wives' full-time employment than that measure would predict. Fuwa offered no explanation for these inconsistencies. Geist (2005) also used the 1994 International Social Survey Program data but analyzed 10 more advanced industrialized societies to find ideology effects weaker whereas time availability effects were stronger in corporatist-conservative welfare regimes such as Germany.

Hook (2006) claims policies supporting female employment shift the benefits of specialization. Using a hierarchical linear model and time diary data from 20 countries over several decades and controlling for the percentage of married women employed, women's work hours, public childcare slots for infants, and weeks of parental leave, she found women's greater aggregate employment rate predicts men's greater time in domestic tasks regardless of an individual woman's employment. Breen and Cooke (2005) argue where policies enhance women's economic autonomy, the proportion of women desiring a gendered

division of labor declines to the point that men believe any female partner will expect a more egalitarian division of domestic tasks. What is necessary to observe greater gender equality is that the *proportion* of economically autonomous women must be sufficiently high to change men's beliefs about what a partner would expect in the domestic sphere, and his willingness to act on those beliefs so that we evolve away from separate spheres. Such a general shift is reflected in Hook's results for countries with high female labor force participation.

As noted, however, the studies to date share common limitations. All use cross-sectional data with a sole household respondent, which fail to capture the dynamic nature of couple negotiations (Gupta, 1999; Kalleberg & Rosenfeld, 1990). For any given couple, employment, earnings, and time in domestic tasks vary across the marital life course as partners accrue work experience, move, lose a job, have children, and so on. Using longitudinal data enables us to control for the effects of such changes in any given time period on the division of housework or childcare, although trying to assess the specific influence of change in each in any given marital year would quickly prove unwieldy.

Taking a cross-sectional sample also yields a biased sample of still-married couples. In an analysis of 188 societies, Fisher (1993) finds that the maximum risk of divorce consistently occurs two to four years after marriage. The studies above do not report average marriage duration, but in one married sample drawn from the National Survey of Families and Households, the average marriage duration was 17 years (Greenstein, 2000: p. 327), whereas in 1990, the median U.S. first marriage duration was approximately 8 years (National Center for Health Statistics, 1995). In a cross-section of married European couples drawn from the 1994 European Community Household Panel, the author found the average marriage duration ranged from 11 years in Great Britain to 18 years in Italy. So cross-sectional results provide insight into bargaining dynamics among only a fraction of all first-married couples.

The comparative studies above focused as well on the division of domestic tasks, at times including some child-related care in a combined measure (Batalova & Cohen, 2002; Fuwa, 2004; Hook, 2006). Thus we have no direct evidence of variation in the factors affecting the division of care as compared with other domestic tasks. Bargaining models assume household tasks are unpleasant activities that individuals wish to avoid, whereas this assumption proves untenable when tasks are displays of love and caring (Ferree, 1990). In a recent overview of U.S. time diary data from the 1960s to the late 1990s, Sayer (2005) finds that across the time period women have reduced and men have increased their hours in housework while both have increased their time in childcare. Further, a key family policy variant across countries is the extent to which it relies on women's unpaid care work or



provides support for maternal employment, both of which affect the time in childcare either parent might spend. Consequently, controlling for the availability of public childcare for very young children demanding the most parental time is important to our understanding of policy effects on the gendered division of labor.

Conceptually, a much broader range of policies shapes gender relations within a country. Cooke (2007) extends Orloff's (1993) dimensions for analyzing gender effects within welfare regimes to detail how education, labor, tax, and social insurance policies, along with family law, alter women's relative power in household bargaining. Labor laws directly affect women's access to paid work and the relative wages earned. Education policies affect women's relative power by the degree to which they might pursue careers on a par with men. The structure of public compulsory education systems also inhibits women's ability to participate in the labor force if there is little provision of childcare before public schooling starts, or if the scheduling of public schooling includes breaks during the week or long vacations between school terms (Gornick, Meyers, & Ross, 1997).

Education and labor laws affect all types of couples, whereas many tax and family laws and social policies differentiate between legally married and other couples. Higher marginal tax rates, where a second earner's income gets taxed at a higher percentage, discourage female employment among married couples, particularly high-earning married couples (Jaumotte, 2003). Tax credits for dependent spouses also discourage married women's employment, again more markedly among higher earners if calculated as a percentage of income rather than at a flat rate. Paternity leave encourages greater sharing of childcare, but extensive maternity leave and policies encouraging part-time employment reinforce a gendered division of labor (Hook, 2006; Jaumotte, 2003).

Benefit entitlement such as unemployment or health insurance and family leave can be based on either individual contributions, which encourages dual-earners, or household income, which tends to reinforce a male breadwinner model. Yet the household test does not necessarily apply to cohabiting couples as it would for married couples, and cohabiting couples at times deny their coresidency in order to continue to qualify for benefits as single heads of household. Family law affects women's rights in the event of marital dissolution and her alternatives to a given relationship and, in turn, her relative power under social exchange parameters (Blau, 1960). In many countries such as the U.S., contract rather than family law covers cohabiting couples, so their rights in this regard vary as well (Kamerman & Kahn, 1997).

It proves impossible to capture all of these elements affecting couples in a great number of countries with three or four policy variables and even the most advanced statistical techniques, so from time to time a more detailed comparison of fewer well chosen cases is in order. Here I extend the comparative findings by using the longitudinal German SocioEconomic Panel to compare first-married couples' division of domestic tasks and childcare during the early years of their marriage across the former East and West Germany. As detailed next, young Germans marrying during the 1990s grew up under two different policy structures that varied their reinforcement of separate spheres, but now both negotiate the household division of labor under the West German state. This analysis not only allows us to see how different policies affect the division of household tasks and childcare, but whether policy effects enhancing women's economic autonomy persist after the specific policy provisions cease.

#### EAST AND WEST GERMANY: A NATURAL POLICY EXPERIMENT

Although arguably coming from a common cultural heritage, the two German regions also exhibited nonpolitical differences before and after World War II much as we might observe across U.S. states. There was a greater prevalence of Protestantism and living in rural communities in the East *Länder* and more Catholics and urban dwellers in the West, but there is variation in these aspects within each region as well as across them and they evolve over time (Bertram, 1996). In contrast, a substantial political divide was immediately and externally imposed after the War. In 1949, five *Länder* were formed into East Germany, or the German Democratic Republic, under Soviet occupation, whereas the remaining *Länder* formed West Germany, or the Federal Republic of Germany, under British, French, and U.S. occupation. East Germany was forced to constitute a new government following the socialist model of Stalinist Russia, whereas Allies required that a new West German constitution containing no vestiges of either the Third Reich or socialism (Moeller, 1993, 1997).

##### *West German Policy: 1949 - 1990*

The Allies identified the Catholic Church as an institution that had not succumbed to the Nazi dictatorship, so conservative West German politicians successfully argued that the new political system be founded on the *pater familias* supported by the Church (Gerhard, 1992; Moeller, 1993; Ostner, 1992; Zimmerman, 1993). Child allowances (*Kindergeld*) were introduced in 1954 and payable to wage earners with three or more children. Although female heads of households—in the early 1950s, nearly five million out of West Germany's

15 million households were headed by divorcees or widows—were eligible for these allowances, only 13% of single mothers qualified (Moeller, 1997). Taxation systems and rebates benefited high-income, single-earner families. The public health insurance scheme also favored single-earner families, as contributions were based on a percentage of income for each adult earner, not on family size, so that partners not employed and children could be insured at no extra cost whereas dual-earner couples paid a percentage on each income (Hohn, 1990).

Mothers were deemed the only satisfactory educators of their children, so school schedules varied from day to day and children were expected to return home for lunch (Ostner, 1993; von Oertzen, 1999). A report published in 1966 highlighted gender disparities in educational attainment and concluded that women were failing to exploit fully their right of education, contrary to the interests of society in terms of educating the next generation (von Oertzen, 1999). Until the 1970s, West German women tended to leave the educational system earlier than men, although fewer women than men had no degree.

The child rebates favoring higher-income households were discontinued in 1975 and replaced by a more generous system of child allowances. During this period, the government also acknowledged the existence of nontraditional families. It was no longer illegal to rent rooms to unmarried couples and the legal positions of single mothers and illegitimate children were defined and strengthened in 1970 (Ostner, 1992; Zimmerman, 1993). Yet unmarried couples still pay higher taxes, have no right to be heir to each other, and the biological father has no right to custody of the children, suggesting very different household factors affect cohabiting as compared with legally married couples (Kolbe, 1999). Consequently, out-of-wedlock births under the West German state make women more economically vulnerable than either divorced or widowed women (Ostner, 1993).

During the 1980s, a conservative government reinstated several advantages for male breadwinner families, including tax rebates, a new childrearing leave targeted toward women, and the baby year pension credit of one year per child for women born after 1921 (Hohn, 1990; Ostner, 1993; Zimmerman, 1993). These provisions encouraged women to exit the labor market during the period of high general unemployment Germany began to experience in the early 1980s, which both reinforced West German men's priority claim to employment and women's domestic roles and reliance on a male breadwinner.

*East German Policy: 1949 - 1990*

The Stalinist constitution adopted by East Germany in 1949 enforced not just women's right but also obligation to work (Budde, 1999; Moeller, 1993; Trappe, 2000). In 1950, the marriage and family law regulations that had been a legacy of the German Civil Code were abolished (Ostner, 1992). In contrast to West Germany, the East German state mandated developing the skill credentials of women through education and vocational training (Budde, 1999), although most women selected from among 16 training programs in traditional female occupations out of almost 200 possible vocations open to them (Nickel, 1992). A larger proportion of East German women attended professional colleges and university than in West Germany (Tons & Young, 2001).

The 1950 Mother and Child Care and Women's Rights Acts established a range of social services in support of full female employment, including plans for a network of public childcare centers, kindergartens, and facilities for free school meals; maternity leave for five weeks before and six weeks after delivery at 100% of their take-home earnings; and days off to tend sick children (Ostner, 1993; Zimmerman, 1993). Between 1966 and 1972, specific policies included expansion of childcare facilities, childbirth subsidies, extension of paid maternity leave to 18 weeks, and easier access to housing and pension credits for motherhood years (Gerhard, 1992; Münz & Ulrich, 1995; Trappe, 2000; Zimmerman, 1993). Between 1972 and 1989, maternity leave was extended to 20 weeks, additional financial support for second children was introduced, and child and health care services were expanded (Zimmerman, 1993).

By the time of reunification in 1990, over 90% of married women in the former East Germany were employed (a figure including those on maternity leave), more than two thirds full-time. In contrast, just 44% of married women in the West were employed and only half of these employed full time (Ostner, 1993). The West German rate is very similar to the historical employment rate for married women in all of Germany up until World War II (Bock, 1991). Although East German women's educational attainment and employment participation nearly equaled that of men, the East German pronatalist policies still assigned women responsibility for the domestic sphere, so maternity leaves, missed days caring for sick children, etcetera, were costs of female employees (Nickel, 1992). As a result, women were viewed as less productive than male employees and were denied key on-the-job training and promotions (Einhorn, 1993; Ferree, 1992). The centralized wage setting in socialist East Germany did nothing to rectify gender wage differentials (Sorensen & Trappe, 1995). Consequently, the net wages of East German women working full time were 76% of men's

(Nickel, 1992), as compared with 65% for West German women working full-time (Frevert, 1989; Gornick, 1999).

East German policy also failed to promote men's participation in domestic work. The 1965 *Familiengesetzbuch* called for a new male consciousness, but no policies were implemented to encourage it. The continuing gender differences in the division of paid and unpaid labor in the home led to the 1989 founding of the *Unabhaengiger Frauenverband* to organize autonomous women's groups and be a voice in policy making, demanding the establishment of women's equality offices and lobbying for full employment, reduced paid work hours, and increased benefits for childrearing for both men and women (Ferree, 1992).

The difference in women's relative resources, however, still yielded a more although not fully egalitarian division of domestic labor in East Germany as compared with West Germany prior to unification. Analyses of time diary data from the 1960s reveal East German men performed an average of 126 minutes per day in all domestic tasks (including 18 minutes in childcare), as compared with 92 minutes (including 10 minutes in childcare) for West German men (Hook, 2006, p. 645). A 1991 time-budget study by the Federal Statistical Office found a similar regional difference shortly after reunification, with the ratio of women to men's time in housework 2.4 to 1 in the West and 1.8 to 1 in the East (Rosenfeld, Trappe, & Gornick, 2004). But many East German women's policy advantages fell with the Berlin Wall.

### *Reunified Germany*

Following reunification, the West German policy structure applied to East Germany. Many childcare centers were closed, although the supply of public childcare still remains substantially higher in the East (Wrohlich, 2005). In 1991, East German firms privatized by the *Treuhand* granted only 3,400 of 20,800 vocational training places to girls (Ostner, 1993), and fewer than one in four new jobs went to women (Gerhard, 1992). Shifting to a market economy also resulted in severe economic dislocation, with unemployment disproportionately high among women so that during the decade, women's employment levels in the two regions converged (Gerhard, 1992; Rosenfeld et al., 2004).

Despite these changes, East German women exhibit a stubbornness (*Eigensinn*) in retaining what Adler (2004, p. 1171) terms "the German Democratic Republic standard biography." As of 1994, East German women and men reported less ideological support for a male breadwinner model than West Germans (Breen & Cooke, 2005). Preliminary analysis of the 2002 International Social Survey Program by the author suggests that the East German

ideology persists among women, but East German men now report slightly greater support for separate spheres than they did in 1994.

This persistence of women's ideology despite reunification under a common state is consistent with Therborn's (1980) notion that ideology is shaped over time by historical material relations. A necessary antecedent to a new social order is the ability to conceive that another way is possible and just. The policies implemented in East Germany after World War II enabled East German women to conceive of an alternative way of dividing paid labor, although the subsequent pronatalist policies in turn reinforced women's responsibility for childrearing, East women had already conceived of a more just way and feminist activism within the country accelerated despite extensive structural barriers (Ferree, 1993). Not until second wave feminism of the 1970s and 1980s did West German women begin to gain policy support in new possibilities for the organization of productive tasks (Tons & Young, 2001).

At the time of unification, West German young adults had formed their expectations regarding life and relationships under policies supporting separate spheres of a male breadwinner model, whereas East German young adults formed expectations under policies supporting women's full time employment. If material relations over time shape gender relations in the private sphere as suggested by both Breen and Cooke (2005) and Therborn (1980), then regardless of East German women's actual educational attainment, work hours, or wages under reunified Germany, East couples should display more egalitarian divisions of domestic tasks. Analyzed next are to what extent these direct and contextual effects predict the postunification division of household tasks and childcare among East and West German first-married couples.

In addition to individual education and employment-related resources, women's age, number and ages of children, couples' cohabitation history, and marital duration also affect men's hours or share in housework (Batalova & Cohen, 2002; Coltrane, 2000). At the contextual level, Fuwa (2004) and Hook (2006) found that aggregate female employment rates influenced housework divisions. Brines (1994) found that U.S. men's unemployment resulted in evidence of gender display, so a higher rate of general unemployment might increase evidence of this in terms of the household division of domestic tasks once controlling for men's and women's individual work hours. The availability of public childcare in the *Länder* remains one persistent policy difference that encourages female employment and reduces the total number of caring hours to be shared within a couple.

## METHOD

### *Data and Sample*

The division of German household tasks and childcare are analyzed using data from the 1990 to 2000 waves of the German SocioEconomic Panel. The panel is a longitudinal study of private German households where each member over the age of 16 is interviewed annually. It began in 1984 with a representative sample of 12,290 people in 5,921 (out of 7,979 contacted or 74%) West German households. Sampling extended into the former East in June 1990, covering 4,453 persons in 2,179 (out of 3,114 contacted or 70%) households. As of the 2000 wave, over 68% of West German and 86% of East German households were still in the panel.

German couples marrying for the first time between 1990 and 1995 are selected and followed until 2000 to compare household dynamics in the decade following reunification. By following new couples over time, we are able to incorporate changes as the marital life course progresses. This particular sample is chosen because these individuals were socialized under the two different states, but negotiated their married lives under the West German state. Couples already married as of 1990 are excluded from analysis, as their inclusion biases results with marriages of longer duration and would include East German couples whose marriages spanned both state policy structures. Historically, East German couples cohabited rather than married at a much greater rate than West German couples, but this difference is converging among the younger cohorts (Adler, 2004). As noted above, West German policy and law still favors legally married over cohabiting couples with rights varying across the two groups. Consequently, the analysis of policy effects here is limited to married couples.

An indicator variable differentiates couples when the woman and man were educated in the former East, yielding samples of 298 West and 50 East couples, a distribution roughly representative of the population distribution across the two regions. This proxy captures the social environment young people were exposed to while forming their expectations and ideologies about women's and men's normative roles in society. Further analysis indicates that there is little migration across the regions since that time; by the end of the observation window, only one couple educated in the East resided in West Germany, and only four West German couples resided in East Germany. Eight mixed-region couples were categorized with West couples because of the similarities in the averages of their characteristics. Couples are followed annually until 2000 unless they divorce or otherwise exit the panel, yielding a total analytical sample of 2,142 West and 335 East German couple-years. Subsequent analyses suggest that younger, lower-income couples were more likely to have missing data for some

of the years that reduces total couple-years in the analysis, but the number of couples represented remains constant. Only couples with children are included in the analyses of the division of childcare: 248 West and 36 East German couples, yielding 1,840 West and 259 East German couple-years, 1,809 total after listwise deletion of missing data. Subsequent analyses again indicate younger, lower-income parents are more likely to have missing data in some years but this does not alter substantive effects.

#### *Variables*

Four dependent variables cover men's hours in and share of household tasks and childcare. Every year, each member of the household over the age of 16 is asked, "How many hours per day do you spend on the following activities? Please give only whole hours. Use zero if the activity does not apply." The activities include "errands (shopping, errands, citizen's duties)," "housework (washing, cooking, cleaning)," "child care," and "repairs on or around the house, car repairs, garden work." This question is further differentiated depending on survey year in terms of "typical weekday," "typical Saturday," and "typical Sunday," although only information on typical weekday is gathered every year. A question regarding time spent on Saturday and Sunday is asked in survey years 1990, 1993, 1995, 1997, and 1999. As the information thus varies consistently for couples, no effort was made to interpolate weekend time in the interim survey years, particularly as household time varies year-to-year for young couples as they form their families and other family circumstances change, a supposition confirmed by the within-couple variation reported in Table 2.

A man's hours in household tasks are calculated as his reported time spent in shopping, errands, citizen's duties, washing, cooking, cleaning, and repairs on or around the house, car repairs, and garden work. I follow Hook (2006) and Lee (2005) in using this broader definition of household tasks because all are necessary to successful home production and must be negotiated, although the time spent in repairs or gardening tends to be limited to weekends and therefore these hours are only included every other year when the question regarding weekend time was included in the survey. Husbands in both regions report performing slightly more time in gardening and repairs than wives, with time in these tasks greater in the East, but these differences are not the primary source of the ones subsequently reported. Husband's share of household tasks is his reported time divided by the summed reports from him and his wife, who reports her own hours in these activities. A man's childcare hours are those fathers report, with his share calculated as his reported hours divided by the total of his and his wife's reported childcare hours. These data do not allow for estimating simultaneity of childcare with household tasks.



Independent individual variables capture relative resources and time availability. The German educational system is quite complex, as is the way it is assessed and recorded on the German SocioEconomic Panel, comprised of different types of secondary schools leading to different postsecondary opportunities and an extensive vocational and technical training system. Consequently, a years-of-education variable is not comparable across individuals as might be the case in general education systems such as the U.S. Most research suggests it is the highest educational attainment associated with different domestic divisions, so two indicator variables are created: one each for when the woman or the man has a university degree against a referent of less than university, which includes both secondary schooling and some technical tertiary schooling. A relative measure in terms of women having more education than the man was tried, but proved insignificant.

After exploring different relative measures, employment effects were assessed using each partner's weekly work hours, along with the wife's hourly wages. Two interaction terms are created to test whether Fuwa's (2004) employment-related interaction effects are replicated with these longitudinal data: one for (East\* wives' weekly employment hours), and one for (East\* wives' wages). Ideology measures are not available in these German data, but another recent analysis using cross-sectional data finds that ideology varies across the two regions but only proves significant in predicting the division of domestic tasks in West Germany, with the magnitude of these effects similar for West German women and men (Cooke, 2006a).

Individual control variables include months the couple cohabited prior to marriage, the woman's age at marriage, marriage duration in years, and indicator variables for key age groups of the first child and whether the couple had a second child to assess father's absolute and relative time in childcare across the child's early life as well as across children. An additional control for total number of children proved insignificant when modeling effects in this way. The child indicators are one for when the first child is younger than two years of age and one when the first child is between three and six years of age (as of 1999, maximum maternity leave ended early during a child's third year or 162 weeks), against a referent of first children aged 7 to 9, the oldest child in this group of young first-married couples. The third indicator is whether the parents had a second child against a referent of having only one child.

Contextual variables include regional unemployment rates, regional female employment rates, and the availability of public childcare slots. The regional employment data are those published by the Federal Statistical Office for each year of the panel. The

number of public childcare slots per 1,000 eligible children under the age of three for each year in each *Lände* is provided by the *Deutsches Jugendinstitut* in Munich for the years 1991, 1994, 1998, and 2002. Childcare slots for the interim years were imputed as simple averages from the available yearly data.

### *Analytic Strategy*

Longitudinal data present special challenges even when used to assess a relatively straightforward outcome such as couples' division of household labor. The repeated annual inquiry of the same couple violates assumptions of ordinary least squares regression that observations be independent and that error terms not be correlated. Consequently, a random effects model using generalized least squares is used here to regress husbands' hours and shares of household tasks, and fathers' hours and share of childcare on the array of individual relative resource, interaction, and contextual variables. Random effects models account for the correlation between successive measurements within a given couple, as well as assess variation resulting from the independent variables across couples. In other words, they separate within-couple changes in the division of domestic tasks over time from differences across couples. Unweighted data are used in the analysis, although substantive differences when weighting or not are very small.

## RESULTS

Descriptive statistics are presented in Table 1. An equal percentage of East and West German women have a university degree (6%), but a larger percentage of East men (16%) have a university degree as compared with West German men (11%). Men in both regions work comparable full-time hours (40 per week), but a woman's paid work hours vary across regions and her parental status. Women in East Germany work slightly more weekly hours on average (18 vs. 15 West German women), and among employed women, East German women work longer hours (40 East vs. 37 West). The vast majority of these young couples has one or two children and mothers' weekly work hours are, on average, lower (15 hours East, 13 hours West).

The regional female employment rates converged over the decade to now be only slightly greater in the East *Länder* at 69% as compared with the West at 66%. Not shown is how this ranged in 1999 from a low of 57% in the North Rhein-Westfalen region bordering France, to a high of 74% in Thüringen, the former East German *Lände* just north of Bavaria. The regional unemployment rates vary more widely, almost 17% in the East as compared with

11% in the West. Public childcare for the youngest children also remains more widely available in the East, with an average of over 300 places for every 1,000 children younger than 3, as compared with fewer than 20 such places in the West *Länder*.

These descriptive statistics suggest that East and West German women's relative resources are more similar postunification than before. Women in the two regions also spend similar amounts of time in household tasks (25 per week East vs. 27 hours per week West) and childcare (34 hours per week in both regions). Despite the current similarity in German women's paid and unpaid labor, East German men spend over four hours more each week on household tasks (16 East, 12 West) and two hours more on childcare (11 East, 9 West) even though public care is more widely available in the East. These hour differences translate into East German men reporting they contribute 39% to household tasks to West German men's 30%, with East German fathers' share of childcare 16% versus 13% among West German fathers. Whether these regional differences in men's average time and share can be explained by the subtle differences in women's employment across the two regions, or in effect derives from differences in individual characteristics under time availability or relative resource models, is explored next.

#### *Predicting Husbands' Household Tasks*

Table 2 displays the main effects of women's relative resources predicting men's hours in and share of household tasks in the first model, those plus the contextual effect for being an East couple in the second model, and the additional interaction effects from being an East couple and women's work hours and wages in the third. The  $R^2$  statistics at the bottom of the table highlight the insight gained from using longitudinal data to assess couples' divisions of household tasks: 6% of the variation in men's hours and 14% of the variation in his share of household tasks is accounted for by year-to-year changes in the independent variables *within a given couple*, suggesting substantial variation in the factors affecting the division of domestic tasks occurs across the marital life course, variation that can only be captured with longitudinal data. Another 15% of the variation in men's household hours and almost one third of the variation in men's household share are accounted for by differences in these variables *across couples*.

That more variation is explained in men's share than his hours highlights that some variables affect the division of household labor because they predict changes in women's housework hours, not men's. On the one hand, both spouses' weekly work hours shift men's hours in domestic tasks, with each additional work hour of the wife predicting her husband

will do about four more minutes per week in household tasks (60 minutes x 0.07). On the other hand, the husband's employment hours decrease his predicted housework hours with the magnitude of the effect almost twice that of the wife's work hours (- 0.13 vs. 0.07). Work hour effects on his relative share are greater and of more equal (albeit opposite) magnitude, suggesting that the primary influence of couples' employment hours derives from changes in women's housework hours as has been found to be the case in several countries (Gershuny, 2000). In this first model, the regional female employment rate is the only other independent variable that proves significant in predicting both husbands' hours and share of household tasks, and a percentage increase in the female regional employment rate has nearly identical effects to an hourly increase in an individual woman's work hours. These findings concur with those claiming the aggregate female employment rate shifts the division of household tasks beyond effects of an individual woman's employment (Breen & Cooke, 2005; Fuwa, 2004; Hook, 2006).

Husbands with university degrees spend significantly fewer hours in household tasks than less-educated husbands, an effect that becomes insignificant once controlling for wives' hours for predicting his share. This suggests that women married to men with university also do fewer hours of household tasks. A wife with a university degree predicts men's share but not his hours will be significantly greater (8 percentage points), again suggesting such women spend fewer hours in household tasks than women with less education. Each month the couple cohabited prior to marriage predicts a slight decrease in his hours but not his share, whereas each percentage point increase in the regional unemployment rate predicts an increase in his hours but not his share. The failure of these effects to appear as well in his relative share suggest the effect of premarital cohabitation and regional unemployment on household hours is similar for women such that the changes disappear when calculating a share. As the number of children increases, a man's hours do not change but his share falls significantly, suggesting the woman does all additional household tasks associated with having children.

The second model adds the indicator variable for East couples, which significantly improves the fit of the model for men's hours as well as his share of household tasks. East men do almost 4 more weekly hours in household tasks, representing a 12 percentage point increase over West German husbands' share. The effects of each spouse's work hours remain the same, as does the magnitude of university effects, although insignificant effects in the first model are now significant.

Contextual effects captured by the regional employment rates change. The size of the effect of the regional female labor force participation rate dissipates, suggesting these effects are stronger in East Germany where women's employment rates have historically been greater. A higher unemployment rate now predicts a significant decline in husband's share of household tasks rather than the increase in his hours predicted in the first model. This suggests two things. First, that the positive effect for regional unemployment in the first model came from omitted variable bias, in that the unemployment rate is significantly higher in East Germany and East German men do more household tasks, so excluding the indicator variable for them made these effects appear to be associated with unemployment rather than the people living in the area with high unemployment. Second, regional unemployment only affects men's share and is now negative, suggesting that once controlling for East couples, where unemployment is high, men do not change their housework hours but women appear to increase theirs. Comparing the correlation between the unemployment rate and men's and women's household hours in the two regions (results not shown), we find a slight but insignificant negative association between the unemployment rate and either East or West German men's domestic hours. Only the positive correlation between the unemployment rate and West German women's household hours proves significant. Consequently, where the threat of unemployment is higher, West German women spend more hours doing domestic tasks.

The third model adds interaction effects with being educated in the East and women's work hours and wages. The fit of the model does not improve significantly, but both interaction terms are significant when predicting a husband's share but not his hours, suggesting these differences work through changes in East wives' housework hours. On the one hand, the interaction of East and women's work hours is negative and countervails most of the main effect of women's work hours predicting an increase in husband's share of household tasks. As East men's hours do not increase for this term, the effect suggests employed East women do not reduce their housework hours as much as do employed West German women. On the other hand, as an East woman's wages increase, her husband is predicted to perform a greater share of housework, although again his actual hours do not shift. Controlling for the interactions, an East husband still performs a 13 percentage points greater share of household tasks than a West German husband.

### *Predicting Husbands' Childcare*

As evident from the coefficients presented in Table 3, relative resources regardless of context are poor predictors of fathers' childcare hours or share. As with the analysis of household tasks, three models are presented including main effects, then adding contextual and then interaction effects, but the latter two do nothing to improve on the main effects model. Almost as much variation is explained by changes over time within couples (*within*  $R^2 = 0.21$ ) as by differences across them (*between*  $R^2 = 0.28$ ). None of the wives' resource variables proves significant, although a father's work hours predict he spends less time in childcare, with a commensurate drop in his share. As when predicting household tasks, controlling for work hours, German fathers with university degrees spend fewer hours in childcare than fathers with less education. Additional analyses (not shown) do not find this stems from university-educated men having fewer children, so it would seem these men just spend fewer hours with the children. As a man's university degree does not predict any difference in his relative share of childcare, this again suggests women married to university-educated men also spend fewer hours in childcare than women married to less-educated men.

Fathers spend more time and contribute a greater share when the first child is very young as compared to when the child is 7 to 9, the maximum age of any child of these couples followed in the first decade of their marriages. Fathers' time declines slightly when the first child is a toddler, whereas his share goes up slightly, suggesting mothers' childcare time declines at this stage in the child's life. These results concur with those reported in a 2000 cross-sectional telephone survey, concluding that fathers' share of childcare increases as the children get older (Künzler, Reichart, & Pfister, 2001), but the increase results from mothers spending less time in childcare as the children age. The birth of a second child does not change a father's time or share of childcare, a robust effect regardless of whether the second child's age was included in the model (results not shown). As noted in results for household tasks, German mothers perform any additional housework associated with having children.

Among the regional factors, a high unemployment rate predicts that fathers spend more time in childcare and contribute a greater share. Unlike with household tasks, however, this effect does not alter once including the East couple indicator variable, so it is an effect robust across both regions of Germany. Neither the female employment rate nor the availability of public childcare alter father's time or share of childcare.

## DISCUSSION

An increasing body of evidence suggests the division of housework varies systematically across countries, being slightly more egalitarian where political and labor relations are more gender-egalitarian (Davis & Greenstein, 2004; Fuwa, 2004; Hook, 2006). We are only beginning to unravel the mechanisms by which this occurs. Baxter (1997) argues it is via women's increasing access to economic resources (main effects), whereas Fuwa (2004) finds that greater gender empowerment increases the effect of an individual woman's relative resources (interaction effects). Breen and Cooke (2005) argue that over time, a fundamental shift in gender relations occurs beyond the effect of individual resources when women as a group are more economically autonomous. This societal situation eventually alters men's beliefs about the desirability of evolving away from separate spheres (contextual effects). Therborn (1980) similarly argues material relations over time shape ideology and the power derived from it to fuel social revolution. Hook (2006) finds the overall female employment rate increases men's domestic participation regardless of an individual woman's employment, providing evidence of such a contextual effect.

To explore further the relationship between policy and the division of domestic labor, we assessed how couples socialized within two divergent policy settings now negotiate household tasks and childcare under the same policy structure. East German policies after World War II enhanced women's relative resources, whereas West German policies reinforced a woman's economic dependence on a male breadwinner. We use longitudinal data and select couples marrying between 1990 and 1995 and follow them until 2000 to test direct, interaction, and contextual effects on the division of household tasks as well as childcare across the two regions now reunified under the West German state. Using the longitudinal data reveals that 6% of the variation in household tasks and 21% of the variation in childcare is accounted for by changes in the variables *within* couples over time, highlighting the dynamic nature of the division of household labor across the marital life course. In fact, the fraction of the variance attributable to changes within a couple over time is large as or greater than the cross-country variance reported by Fuwa (2004) or Hook (2006).

Direct, interaction, and contextual effects all predict significant shifts in the division of household tasks, but not necessarily an increase in husbands' actual hours. Where a factor predicts his greater share but no increase in his hours, this indicates the effect derives from wives altering their domestic hours. This appears to be the case for paid employment hours, women's education, and the regional employment factors. A wife's weekly work hours increase husband's weekly housework hours slightly—four minutes per week for each hour

she is in paid employment—but predict a larger share. This indicates as others have found that employed women decrease their housework hours more than men increase their own to adjust to wives' reduced time availability for domestic tasks. East German employed wives, however, reduce their domestic hours less, as the interaction term with wives' work hours and being an East couple was also significant and negative. At the same time, the only significant wage effect was again among East German wives', with wives' higher wages predicting a rise in husbands' share, but not hours of household tasks. Together these effects suggest that West German couples with their higher average wages might be purchasing domestic services as women increase their hours in employment, a possibility feasible only among higher-wage East German women. An increasing proportion of German couples in both regions utilize *Buelgelfrau* 'ironing board woman' and *Putzfrau* 'cleaning woman' from Eastern Europe, black-market labor paid very low wages. A similar situation occurs in the United States, where well paid women ease the domestic burden by paying lower-skilled women to clean, whereas the latter group do not earn enough and so incur the greatest burden of paid and unpaid work. This hints that some current equality in the home is gained by leveraging class, ethnic, or immigrant inequality, a global trend worthy of future research.

The regional employment context also shifts the division of household tasks. Greater female employment predicts husbands perform a greater share of household tasks, similar to the effects found by Hook (2006). This supports Breen and Cooke's (2005) argument that where a greater share of women is economically more independent, men take on a greater share of domestic tasks. But here the female employment rate has no effect on men's actual hours, suggesting women living in regions where more women are employed do less housework regardless of their actual employment hours. The combined individual, wage, and employment rate effects might explain Fuwa's results that liberal regimes such as Britain and Australia show stronger effects of wives' full-time employment on men's share of housework than the Gender Empowerment Measure would predict. Couples in more advanced economies have access to and the ability to pay for market services such as restaurants, prepackaged meals, laundries, and so on, to reduce the total amount of domestic tasks to be negotiated within the household. So husbands in these liberal regimes might not be contributing more *hours* than husbands in socialist countries, but their relative share appears greater because the total household time is less as some services are being purchased from the market. The effect of the increasing *commodification* of domestic tasks under advancing industrialization in terms of societal and household divisions of domestic tasks, and what it



means for gender as well as other group equality as noted above, are areas not yet explored in the comparative literature.

Higher regional unemployment rates predict a less egalitarian division of domestic tasks, after controlling for East couples where the unemployment rate remains generally higher. This contextual effect of the macroeconomic environment mirrors Brines's (1994) results found at the individual level where unemployed U.S. husbands contribute a lesser share of housework than employed husbands. She interprets this result as evidence of men's "gender display" reinforcing a masculine identity when not performing their normative masculine economic role. The subsequent work of Bittman et al. (2003) comparing Australia with the United States found the U.S. effect came from men's reduction in their housework hours whereas the Australia effect came from wives' increasing theirs, suggesting which partner in the couple does gender in this way varies in context. To see which gender does gender in Germany, we compared the correlation between the unemployment rate and men's and women's household hours in the two regions. The only significant correlation was a positive one between West German women's domestic hours and the unemployment rate. Consequently, West German women, similar to the women in the strong male-breadwinner country of Australia, seem to display compensatory domestic behavior when the macroeconomic structure *threatens* the traditional West German male economic role. This conclusion is only conjecture, however; we would gain much insight with future cross-national qualitative research conducted within the home to enable clearer interpretation of quantitative results in context.

University education effects contrast with those found among U.S. couples. A German wife with university predicts her husband's greater share of household tasks as found for the United States, but in contrast to U.S. findings, a German husband with university spends fewer hours and devotes a lesser share to household tasks than husbands with less education. The U.S. men's university effect is often interpreted as an education effect on his ideology (Shelton & John, 1996), but the German results suggest that higher education does not necessarily impart gender egalitarian ideals. Although university education was the historical purview of the male elite in many societies, U.S. women attained higher levels of education far earlier than their German counterparts. By 1880, one out of every three undergraduates in U.S. universities and colleges was female (Sklar, 1993), a proportion of women in university that would not be reached in East or West Germany until the 1970s. Today, a greater proportion of all U.S. secondary school graduates go on to university than in Germany, and a larger share of the youngest cohort of U.S. women as compared with men attain at least

tertiary education whereas in Germany, a larger share of the youngest cohort of men still does (OECD, 2002). Consequently, in comparative work it is important to assess what gender ideology a country's higher education system might reinforce and not assume it is always an egalitarian one. Future research might explore what structure of education (general education as in Australia, Great Britain, or the U.S. as compared with more stratified systems as in Germany or the Netherlands), content, or course of study, and proportion of women with university education predict more egalitarian ideology for either women or men along with the degree of equity in both paid and unpaid labor.

Once accounting for the various individual and regional effects, East husbands spend over four hours more per week in household tasks, and their share is over 13 percentage points greater than West German husbands'. Clearly, then, in the decade following reunification, convergence in the two regions did not materialize despite the depressed labor market conditions and new challenges being faced by East German couples. These results highlight that policy effects on the gendered division of paid labor fundamentally alter gender relations in the home, a point argued from a bargaining perspective by Breen and Cooke (2005) and from an ideological perspective by Therborn (1980). Female employment and men's share of domestic tasks, however, are almost as high in the United States as in East Germany (Fuwa, 2004, p. 757). In contrast to East Germany, U.S. policy remains basically silent on the private sphere while simultaneously giving market forces perhaps the greatest rein of all industrialized countries. This pattern of findings suggests that policies *or* pure market dynamics can both lead to more egalitarian divisions of domestic tasks. Future work might compare and contrast market versus state effects on encouraging greater equity.

What cannot be differentiated in the analyses here is whether convergence is occurring over time for the two regional populations stemming from a confluence of competing effects that the selected sample does not incorporate. Here we observe only couples marrying in the early 1990s and follow them for a decade, not all cohorts of couples marrying since reunification. As young people become socialized for more of their lives under West German policies, greater convergence might be apparent in couples marrying since 2000, for example, than in the prior decade. At the same time, West Germany is evolving as well. Numerous legal restrictions on West German women's employment participation were eliminated beginning in the late 1970s, so ideological power derived from these new material relations would alter West German gender relations as it had East German under former socialist policies, only later in historical time. More recent European Union gender mainstreaming objectives and court decisions have also forced West German policies to move still further

away from a male breadwinner model and instead codify greater gender equity (Tons & Young, 2001). Consequently, greater regional convergence might occur not because the egalitarianism of East Germany wanes, but because egalitarianism in West Germany waxes. The preliminary analysis of the 2002 International Social Survey Program noted earlier suggests such convergence pressures from both sides; East German men report slightly more support for separate spheres in 2002 than they did in 1994, but East German women and West German men and women report more egalitarian attitudes. More waves of longitudinal data and cohort analyses controlling for policy changes will be needed to explore German convergence patterns in more detail.

The study here is also limited in that it analyzes married couples, whereas an increasing proportion of young German couples choose cohabitation in lieu of marriage (Adler, 2004). Most research comparing cohabiting with legally married couples finds differences in the division of domestic labor, but none to date has compared the extent to which these might be selection effects (e.g., who chooses to cohabit versus marry) or contextual effects on relative power. Many state policies differentiate between *de facto* and *de jure* couples, and even differentiate between *de facto* couples. For example, married and cohabiting couples in Australia must include their partner's income to determine benefit entitlement, unless they happen to be same-gender cohabiting couples. The complex ways in which policy discriminates or reinforces family assumptions and affects relative gender power under changing demographics remains a vastly under-researched area.

Among the German couples, contextual effects do not apply unilaterally to all domestic tasks. The second key finding here is that the division of childcare is not amenable to modeling with relative resource variables. Men's hours and share of childcare are highest when the first child is younger than two years of age; his hours decline a bit and his share increases as children grow older. German men's hours and share in childcare are also appreciably less than their contribution to other domestic tasks. These findings suggest that in both German regions, responsibility for children remains the purview of women.

What cannot be ascertained with these data is whether this reflects maternal gatekeeping among German mothers or resistance of German fathers to devoting more hours with their children. Allen and Hawkins (1999) find that among U.S. dual-earner couples a substantial minority (21%) of mothers are active gatekeepers of fathers' access to the children. Sayer also found that the U.S. gender gap in housework had closed further than the gap in childcare. In 1998, women's to men's relative time in housework had shrunk to 1.4, whereas U.S. women retained childcare at a proportion of 2.2 (Sayer, 2005, p. 292). Using the means

reported in Table 1, equivalent proportions in East Germany are 1.6 for household tasks and 3.2 for childcare, whereas in West Germany, domestic tasks remain most gendered at 2.3 for household tasks and 4.0 for childcare. The policy reinforcement of women's domestic responsibility encouraging maternal gatekeeping appears more acute in Germany than in the United States. Until 1977, West German women's responsibility for the home and children was a legal duty. The Mommy Politics of the East German maternal support provisions also reinforced women's responsibility for childcare (Ferree, 1993). We need to explore further with more suitable data policy as well as cultural differences in maternal gatekeeping, in conjunction with fathers' possible resistance to adopting more of the caring role.

Finding persistent policy effects is an exciting indication of how the state shapes gender relations, but the above proportions also highlight that gendered divisions persist, just to varying degrees. This pattern points to another limitation of the research in that policy comprises just one contextual effect. Other important effects derive from organized religion or rural versus urban living or whether the respondent is an immigrant from another culture in the host country, none of which are modeled here and can countermand even progressive policy. Only when including measures of a range of institutional effects on the gendered division of labor can we more confidently assert the extent to which bargaining models or the gender perspective appear to explain modern gender relations.

Finally, we should extend contextual analyses of the household division of labor to explore not only sociopolitical effects on the division, but effects of varying divisions on other family outcomes. Some evidence indicates that Hungarian men's greater involvement in housework and Swedish men's taking of parental leave both increase the likelihood a couple will have a second child (Oláh, 2003), whereas traditional and egalitarian U.S. couples are both more likely to (Torr & Short, 2004). Other evidence suggests the effect of equity on relationship stability varies in context. Cooke (2006b) finds in West Germany where policy supported a male breadwinner model, any movement away from gender specialization in terms of wives' relative earnings or husbands' relative housework increases the risk of divorce. In contrast, equitable distributions of the household division of labor predicted under social exchange models prove optimal in the United States where policy remains silent on the private sphere. Much more comparative research is needed to understand better the ways in which policy and the market together shape our gender identities, and the implications of these on family forms and outcomes in postindustrial societies.

## REFERENCES

- Adler, M. (2004). Child-free and unmarried: Changes in the life planning of young East German women. *Journal of Marriage and Family*, 66, 1170 - 1179.
- Allen, S. M., & Hawkins, A. J. (1999). Maternal gatekeeping: Mothers' beliefs and behaviors that inhibit greater father involvement in family work. *Journal of Marriage and the Family*, 61, 199 - 212.
- Batalova, J. A., & Cohen, P. N. (2002). Premarital cohabitation and housework: Couples in cross-national perspective. *Journal of Marriage and Family*, 64, 743 - 755.
- Baxter, J. (1997). Gender equality and participation in housework: A cross-national perspective. *Journal of Comparative Family Studies*, 28, 220 - 247.
- Bertram, H. (1996). Familienentwicklung und haushaltsstrukturen [Family development and household structures]. In W. Strubelt, J. Genosko, H. Bertram, J. Friedrichs, P. Gans, H. Haußermann, U. Herlyn, & H. Sahner (Eds.), *Städte und regionen: Räumliche folgen des transformationsprozesses* [Cities and regions: Spatial consequences of the transformation process] (pp. 183 – 215). Opladen, Germany: Leske and Budrich.
- Bianchi, S. M., Milkie, M. A., Sayer, L. C., & Robinson, J. P. (2000). Is anyone doing the housework? Trends in the gender division of household labor. *Social Forces*, 79, 191 - 228.
- Bittman, M., England, P., Folbre, N., Sayer, L. C., & Matheson, G. (2003). When does gender trump money? Bargaining and time in household work. *American Journal of Sociology*, 109, 186 - 214.
- Blau, P. (1960). *Exchange and power in social life*. New York: Wiley.
- Bock, G. (1991). Antinatalism, maternity and paternity in national socialist racism. In G. Bock & P. Thane (Eds.), *Maternity and gender policies: Women and the rise of the European welfare states 1880s-1950s* (pp. 233 - 255). London: Routledge.
- Breen, R., & Cooke, L. P. (2005). The persistence of the gendered division of domestic

- labour. *European Sociological Review*, 21, 43 - 57.
- Brines, J. (1994). Economic dependency, gender and the division of labor at home. *American Journal of Sociology*, 100, 652 - 688.
- Budde, G. (1999). Women's policies in the GDR in the 1960s/70s: Between state control and societal reaction. In R. Torstendahl (Ed.), *State policy and gender system in the two German states and Sweden 1945-1989* (pp. 199 - 217). Lund, Sweden: Bloms i Lund Tryckeri.
- Coltrane, S. (2000). Research on household labor: Modeling and measuring the social embeddedness of routine family work. *Journal of Marriage and the Family*, 62, 1208 - 1233.
- Connell, R. W. (1987). *Gender and power: Society, the person and sexual politics*. Stanford, CA: Stanford University Press.
- Cooke, L. P. (2007). Policy pathways to gender power: State-level effects on the division of housework. *Journal of Social Policy*, 36, 1 - 22.
- Cooke, L. P. (2006a). Policy, preferences and patriarchy: The division of domestic labor in East Germany, West Germany, and the United States. *Social Politics*, 13, 1 - 27.
- Cooke, L. P. (2006b). "Doing" gender in context: Household bargaining and the risk of divorce in Germany and the United States. *American Journal of Sociology*, 112, 442 - 72.
- Davis, S. N., & Greenstein, T. N. (2004). Cross-national variations in the division of household labor. *Journal of Marriage and Family*, 66, 1260 - 1271.
- Einhorn, B. (1993). *Cinderella goes to market: Citizenship, gender and women's movements in East Central Europe*. London: Verso.
- Fenstermaker Berk, S. (1985). *The gender factory: The apportionment of work in American households*. New York: Plenum Press.
- Ferree, M. M. (1993). The rise and fall of "mommy politics": Feminism and unification in

- (East) Germany. *Feminist Studies*, 19, 89 - 115.
- Ferree, M. M. (1992). Institutionalizing gender equality: Feminist politics and equality offices. *German Politics and Society*, 24 & 25, 53 - 65.
- Ferree, M. M. (1990). Beyond separate spheres: Feminism and family research. *Journal of Marriage and the Family*, 52, 866 - 884.
- Fisher, H. (1993). *Anatomie der liebe. [Anatomy of love.]* Munich: Droemer Knaur.
- Frevert, U. (1989). *Women in German history: From bourgeois emancipation to sexual liberation.* Oxford, UK: Berg.
- Fuwa, M. (2004). Macrolevel gender inequality and the division of household labor in 22 countries. *American Sociological Review*, 69, 751 - 767.
- Geist, C. (2005). The welfare state and the home: Regime differences in the domestic division of labour. *European Sociological Review*, 21, 23 - 41.
- Gerhard, U. (1992). German women and the social costs of unification. *German Politics and Society*, 24 & 25, 16 - 33.
- Gershuny, J. (2000). *Changing times: Work and leisure in postindustrial society.* Oxford, UK: Oxford University Press.
- Geschka, O. (1990). Participation and disadvantage: Women in the educational system. In E. Kolinsky (Ed.), *The Federal Republic of Germany* (pp. 189 - 198). Oxford, UK: Berg.
- Goldscheider, F. K., & Waite, L. J. (1991). *New families, no families? The transformation of the American home.* Berkeley, CA: University of California Press.
- Gornick, J. C. (1999). Gender equality in the labour market: Women's employment and earnings. In D. Sainsbury (Ed.), *Gender and welfare state regimes* (pp. 210 - 242). Oxford, UK: Oxford University Press.
- Gornick, J. C., Meyers, M. K., & Ross, K. E. (1997). Supporting the employment of mothers: Policy variation across fourteen welfare states. *Journal of European Social Policy*, 7, 45 -

70.

- Greenstein, T. N. (2000). Economic dependence, gender, and the division of labor in the home: A replication and extension. *Journal of Marriage and the Family*, 62, 322 - 335.
- Gupta, S. (1999). The effects of transitions in marital status on men's performance of housework. *Journal of Marriage and the Family*, 61, 700 - 711.
- Hohn, C. (1990). Country report for the Federal Republic of Germany. In W. Dumon (Ed.), *Family policy in EEC countries* (pp. 79 - 102). Report prepared for the Commission of the European Communities, Directorate General for Employment, Social Affairs and Education.
- Hook, J. L. (2006). Men's unpaid work in 20 countries, 1965 – 1998. *American Sociological Review*, 71, 639 - 660.
- Jaumotte, F. (2003). *Female labour force participation: Past trends and main determinants in OECD countries*. Economics Working Paper ECO/WKP 30. Paris: Organisation for Economic Cooperation and Development.
- Kalleberg, A. L., & Rosenfeld, R. A. (1990). Work in the family and in the labor market: A cross-national, reciprocal analysis. *Journal of Marriage and the Family*, 52, 331 - 346.
- Kamerman, S. B., & Kahn, A. J. (1997). *Family change and family policies in Great Britain, Canada, New Zealand and the United States*. Oxford, UK: Clarendon Press.
- Kolbe, W. (1999). Gender and parenthood in West German family politics from the 1960s to the 1980s. In R. Torstendahl (Ed.), *State policy and gender system in the two German states and Sweden 1945-1989* (pp. 133 - 167). Lund, Sweden: Bloms i Lund Tryckeri.
- Künzler, J., Reichart, E., & Pfister, G. (2001). *Gender division of labour in unified Germany*. WORC Report 01.04.07, Tilburg, Netherlands: Tilburg University Press.
- Lee, Y. (2005). Measuring the gender gap in household labor: Accurately estimating wives' and husbands' contributions. In B. Schneider & L. J. Waite (Eds.), *Being together*,



*working apart: Dual-career families and the work-life balance* (pp. 229 - 247).

Cambridge, UK: Cambridge University Press.

Moeller, R. G. (1993). *Protecting motherhood: Women and the family in the politics of postwar West Germany*. Berkeley, CA: University of California Press.

Moeller, R. G. (1997). *West Germany under construction: Politics, society, and culture in the Adenauer Era*. Ann Arbor, MI: University of Michigan Press.

Münz, R., & Ulrich, R. E. (1995). Depopulation after unification? Population prospects for East Germany, 1990-2010. *German Politics and Society*, 13, 1 - 49.

National Center for Health Statistics. (1995). *Monthly Vital Statistics Report 43*. Washington, DC: US Department of Health and Human Services.

Nickel, H. (1992). Women in the German Democratic Republic and in the New Federal States: Looking backwards and forwards. *German Politics and Society*, 24 & 25, 34 - 52.

Oláh, L. (2003). Gendering fertility: Second births in Sweden and Hungary. *Population Research and Policy Review*, 22, 171 - 200.

OECD. (2002). *Education at a glance 2002*. Paris: Organisation for Economic Cooperation and Development.

Orloff, A. S. (1993). Gender and the social rights of citizenship: The comparative analysis of gender relations and welfare states. *American Sociological Review*, 58, 303 - 328.

Ostner, I. (1993.) Slow motion: Women, work and the family in Germany. In J. Lewis (Ed.), *Women and social policies in Europe: Work, family and the state* (pp. 92 - 115). Aldershot, UK: Edward Elgar.

Ostner, I. (1992). Ideas, institutions, traditions: The experience of West German women, 1945-1990. *German Politics and Society*, 24 & 25, 87 - 99.

Pfau-Effinger, B. (1998). Gender cultures and the gender arrangement—a theoretical framework for cross-national gender research. *Innovation: The European Journal of*

- Social Sciences*, 11, 147 - 166.
- Rosenfeld, R. A., Trappe, H., & Gornick, J. C. (2004). Gender and work in Germany: Before and after reunification. *Annual Review of Sociology*, 30, 103 - 124.
- Sayer, L. (2005). Gender, time and inequality: Trends in women's and men's paid work, unpaid work and free time. *Social Forces*, 84, 285 - 303.
- Shelton, B. A., & John, D. (1996). The division of household labor. *Annual Review of Sociology*, 22, 299 - 322.
- Sklar, K. K. (1993). The historical foundations of women's power in the creation of the American welfare state, 1830-1930. In S. Koven & S. Michel (Eds.), *Mothers of a new world: Maternalist politics and the origins of welfare states* (pp. 43 - 93). New York: Routledge.
- Sorensen, A., & Trappe, H. (1995). The persistence of gender inequality in earnings in the German Democratic Republic. *American Sociological Review*, 60, 398 - 406.
- South, S. J., & Spitze, G. (1994). Housework in marital and nonmarital households. *American Sociological Review*, 59, 327 - 347.
- Sullivan, O. (2006). *Changing gender relations, changing families: Tracing the pace of change over time*. Lanham, MD: Rowman & Littlefield.
- Therborn, G. (1980). *The ideology of power and the power of ideology*. London: Verso Press.
- Tons, K., & Young, B. (2001). The case of Germany. In U. Behning & A. S. Pascual (Eds.), *Gender mainstreaming in the European employment strategy* (pp. 129 - 156). Brussels: European Trade Union Institute.
- Torr, B. M., & Short, S. E. (2004). Second births and the second shift: A research note on gender equity and fertility. *Population and Development Review*, 30, 109 - 130.
- Trappe, H. (2000). Work and family in women's lives in the German Democratic Republic.

- In T. L. Parcel & D. B. Cornfield (Eds.), *Work and family: Research informing policy* (pp. 5 - 29). Thousand Oaks, CA: Sage.
- von Oertzen, C. (1999). Women, work and the state: Lobbying for part-time work and “practical equality” in the West German Civil Service 1958-1969. In R. Torstendahl (Ed.), *State policy and gender system in the two German states and Sweden 1945-1989* (pp. 79 - 104). Lund, Sweden: Bloms i Lund Tryckeri.
- West, C., & Zimmerman, D. H. (1987). Doing gender. *Gender and Society*, 1, 125 - 151.
- Wrohlich, K. (2005). *The excess demand for subsidized child care in Germany*. Institute for the Study of Labor (IZA) Discussion Paper 1515.
- Zimmerman, K. (1993). Labour responses to taxes and benefits in Germany. In A. B. Atkinson & G. V. Mogensen (Eds.), *Welfare and work incentives: A northern European perspective* (pp. 192 - 240). Oxford, UK: Clarendon Press.

TABLE 1. DESCRIPTIVE STATISTICS FOR EAST AND WEST GERMAN FIRST-MARRIED COUPLES

(N = 348 COUPLES, 284 COUPLES WITH CHILDREN)

	<u>East German Couples</u>		<u>West German Couples</u>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Wife's work hours	18.27	21.08	15.01	19.38
When wife employed	40.26	9.58	36.57	11.23
When a mother	15.12	20.14	12.57	18.38
Wife's wages (DM)	7.78	10.04	7.94	11.55
Husband's work hours	40.37	16.41	40.06	15.06
Husband's hours household tasks	16.23	10.13	11.71	9.53
Wife's hours household tasks	25.21	13.99	26.60	14.23
Husband's share household tasks	39.21	17.54	29.65	19.52
Father's hours childcare	10.53	14.55	8.45	11.82
Mother's hours childcare	33.87	30.65	33.78	31.95
Father's share childcare	16.29	19.33	12.76	15.90
Wife with university	.06	.24	.06	.23
Husband with university	.16	.37	.11	.32
Wife's age at marriage	23.50	2.77	24.30	3.86
Duration of marriage	7.51	2.01	7.98	2.15
Number of children	1.25	.83	1.43	.83
Months cohabited before marriage	9.68	14.63	11.05	17.32
Regional unemployment rate	16.68	2.48	10.90	1.62
Regional female employment rate	69.09	5.60	66.40	6.64
Public childcare/1000 children 0 - 3	310.52	176.10	18.78	32.21

*Note:* Total sample represents  $N = 2,188$  couple-years, childcare hours and share represents  $N = 1,809$  couple-years with children. These descriptive statistics represent averages over the observed marital life course of these first marriages during the 1990s, not a cross-section of German couples. During the observation period, 13 East German and 93 West German couples divorced, or approximately 4% of each sample.

TABLE 2. RANDOM EFFECTS GENERALIZED LEAST SQUARES MAIN, INTERACTION, AND CONTEXTUAL EFFECTS PREDICTING GERMAN HUSBANDS' HOURS IN AND SHARE OF HOUSEHOLD TASKS ( $N = 2,118$  COUPLE-YEARS FOR 348 COUPLES)

Variable	No East Effects				East Main Effect				East Interactions			
	Men's Hours		Men's Share		Men's Hours		Men's Share		Men's Hours		Men's Share	
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Wife's weekly work hours	.07***	.02	.28***	.03	.07***	.02	.26***	.03	.07***	.02	.29***	.03
Husband's weekly work hours	-.13***	.01	-.23***	.03	-.13***	.01	-.23***	.03	-.13***	.01	-.23***	.03
Wife's hourly wages	-.01	.03	.09*	.05	-.01	.03	.11*	.05	-.01	.03	.08	.05
Wife with university <sup>a</sup>	2.79	1.49	8.28**	2.86	3.03*	1.49	8.97**	2.84	3.04	1.49	9.00**	2.84
Husband with university <sup>a</sup>	-4.14***	1.09	-3.74	2.09	-4.51***	1.09	-4.88*	2.08	-4.53***	1.10	-5.10**	2.09
Wife's age at marriage	.16	.10	.19	.19	.18	.10	.25	.18	.18	.10	.26	.18
Duration of marriage (years)	.07	.15	-.08	.29	.08	.15	-.08	.29	.07	.15	-.07	.29
Number of children	-.57	.42	-2.41**	.80	-.52	.42	-2.29**	.79	-.52	.42	-2.30**	.79
Months cohabited before marriage	-.05*	.02	-.02	.04	-.05*	.02	-.02	.04	-.05*	.02	-.02	.04
Regional unemployment rate (%)	.33**	.10	.14	.20	.01	.15	-.79**	.27	.02	.15	-.76**	.27
Regional female employment rate (%)	.08**	.03	.25***	.06	.04	.03	.12*	.06	.04	.03	.12*	.06
Wife and husband educated in East <sup>b</sup>					3.92**	1.31	12.11***	2.45	4.05**	1.39	13.01***	2.58
East*wife's work hours									-.01	.05	-.21**	.08
East*wife's hourly wages									.00	.09	.34*	.16
Constant	4.67	3.90	17.08*	7.40	10.15*	4.30	33.29***	8.05	10.06*	4.31	32.52***	8.07
<i>Within R</i> <sup>2</sup>	.06		.14		.06		.15		.06		.15	
<i>Between R</i> <sup>2</sup>	.15		.31		.15		.33		.15		.33	
<i>Overall R</i> <sup>2</sup>	.11		.23		.11		.24		.11		.24	
<i>Rho</i>	.26		.30		.26		.30		.26		.30	
<i>Wald <math>\chi</math>-square</i>	171.09***		445.45***		180.63***		475.68***		180.61***		482.47***	

<sup>a</sup>Education: 0 = less than university, 1 = university. <sup>b</sup>East couple: 0 = West couple, 1 = East couple.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ . (two-tailed tests)

TABLE 3. RANDOM EFFECTS GENERALIZED LEAST SQUARES MAIN, INTERACTION, AND CONTEXTUAL EFFECTS PREDICTING GERMAN FATHERS' HOURS IN AND SHARE OF CHILDCARE ( $N = 1,809$  COUPLE-YEARS FOR 284 COUPLES)

Variable	No East Effects				East Main Effect				East Interactions			
	Men's Hours		Men's Share		Men's Hours		Men's Share		Men's Hours		Men's Share	
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Wife's weekly work hours	-.03	.02	-.01	.03	-.03	.02	-.01	.036	-.04	.02	-.04	.03
Husband's weekly work hours	-.15***	.02	-.17***	.03	-.15***	.02	-.17***	.03	-.15***	.02	-.17***	.02
Wife's hourly wages (DM)	-.05	.03	.02	.04	-.05	.03	.02	.04	-.04	.04	.01	.05
Wife with university <sup>a</sup>	.04	1.81	1.79	2.51	.08	1.82	1.81	2.51	.00	1.81	1.41	2.50
Husband with university <sup>a</sup>	-2.70*	1.21	-.32	1.69	-2.76*	1.23	-.33	1.71	-2.63*	1.23	-.15	1.70
Wife's age at marriage	.22	.12	.13	.16	.22	.12	.13	.16	.21	.12	.14	.16
Duration of marriage (years)	.10	.18	.39	.25	.09	.18	.39	.25	.10	.18	.40	.24
Months cohabited before marriage	-.02	.02	-.06	.03	-.02	.02	-.06	.03	-.02	.02	-.06	.03
Regional unemployment rate (%)	.48**	.18	.92***	.23	.45*	.21	.91***	.27	.44*	.21	.85**	.27
Regional female employment rate (%)	.07	.05	.05	.06	.07	.05	.05	.06	.07	.05	.05	.06
First child age 0 to 2 <sup>b</sup>	9.38***	.71	12.53***	.91	9.40***	.72	12.55***	.92	9.35***	.71	12.47***	.92
First child age 3 to 6 <sup>c</sup>	8.83***	.73	13.18***	.93	8.86***	.73	13.21***	.94	8.77***	.73	12.98***	.94
Whether a second child <sup>d</sup>	.34	.77	.69	1.00	.34	.77	.69	1.00	.36	.77	.74	1.00
Public childcare/1000 children 0 to 3	-.00	.00	-.00	.01	-.00	.01	-.00	.01	-.00	.01	-.01	.01
Wife and husband educated in East <sup>e</sup>					.53	2.19	.22	2.96	-.08	2.24	-1.92	3.02
East*wife's work hours									.11	.07	.10	.09
East*wife's hourly wages									-.12	.13	.17	.16
Constant	-4.66	5.34	-6.27	7.08	-4.20	5.62	-6.03	7.40	-3.86	5.62	-5.29	7.37
Within $R^2$	.21		.23		.21		.23		.21		.23	
Between $R^2$	.28		.29		.28		.29		.29		.30	
Overall $R^2$	.22		.25		.22		.25		.22		.25	
Rho	.17		.22		.17		.21		.16		.21	
Wald $\chi$ -square	498.70***		561.42***		498.67***		561.43***		502.47***		576.34***	

<sup>a</sup>Education: 0 = less than university, 1 = university. <sup>b</sup>First child age: 0 = older than 6, 1 = age 0 to 2. <sup>c</sup>First child age: 0 = older than 6, 1 = age 3 to 6. <sup>d</sup>Second child: 0 = no, 1 = yes. <sup>e</sup>East couple: 0 = West couple, 1 = East couple.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ . (two-tailed tests)