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The Context of Relative Equality: Comparing Educational Gradients in the Gendered Division of Labor in Three Liberal Markets

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Abstract

We compare the educational gradient in employment, housework and child care in Australia, the United Kingdom and the United States using recent LIS and Multinational Time Use data. All three countries have above-average aggregate income inequality, but it is least in Australia and greatest in the United States. The greater aggregate income equality in Australia narrows educational differences across women as well as men, and in turn the gender differences in employment hours at each level of education. The compromise for this greater equality is a greater gendered division of housework, but not child care. The UK and US aggregate income inequality allows highly-educated, particularly US women to reduce their housework time, but at a cost of longer total work hours for educated men and women, and greater educational differences across women. Thus aggregate income equality shapes relative gender equality in paid and unpaid work between women and men, and among women.

The Context of Relative Equality: Comparing Educational Gradients in the Gendered Division of Labor in Three Liberal Markets

Education plays an important role in structuring relative gender equality in the paid and unpaid work of industrial societies. Cross-national evidence to date reveals that women's and men's likelihood of employment and their earnings increase as educational attainment increases (OECD 2009: 129, 144). Less-educated women spend more time doing housework than highly-educated women, whereas educated men perform more housework than less-educated men (Hook 2010; Sayer 2010). Mothers still spend significantly more time providing routine care than fathers (Craig and Mullan 2011), but highly-educated mothers and fathers devote more time to child care than less-educated parents (Bianchi, Robinson and Milkie 2006; Sayer, Gauthier and Furstenberg 2004).

McLanahan (2004) argues these disparities reflect how educated women have benefited from second-wave feminism, but at a cost of widening differences in relative gender equality among women. Educated women's greater employment provides them with more financial resources, and they partner with educated men who value equity and participate more in unpaid tasks (2004: 617). In contrast, de-industrialization has eliminated high-wage jobs for less-skilled men, which negatively affects the marriage market for less-educated women. Thus less-educated women have fewer direct and indirect economic resources, but changing norms and welfare provision make it easier for less-educated men to "shirk their fatherhood responsibilities" (2004: 619).

Aggregate income equality, however, shapes the educational gradients of gendered divisions of paid and unpaid labor and thus influences gender inequality patterns between

women and men, and among women. The income inequality of liberal labor markets such as the United States provides women with greater relative returns to a university degree as compared with university-educated women in more regulated labor markets (OECD 2009: 144). Aggregate income inequality also supports development of a low-wage service sector to which more domestic tasks might be outsourced, such as private child care (Morgan 2005) or cleaning services (de Ruijter and Van de Lippe 2009). Aggregate income inequality therefore undergirds the educational differences among women argued by McLanahan (2004; see also England 2010).

In contrast, greater income equality is associated with both greater and lesser gendered divisions of labor for all women. Greater income equality can support a strong male breadwinner model that discourages women's employment as in Germany (Lewis 1992; Pettit and Hook 2009). But greater income equality also supports the gender-egalitarian policies in countries such as Sweden, although women still face high levels of occupational segregation (Lewis and Åström 1992; Mandel and Semyonov 2006). In both cases, greater income equality inhibits development of a low-wage service sector to which some domestic tasks might be transferred, limiting even educated women's ability to outsource unpaid work. Thus greater aggregate income equality might reduce the educational gradient across women, but not necessarily a gendered division of "work."

This paper makes an important contribution to the literature in three ways. First, rather than compare countries with divergent sets of policies relating to gender equality, we instead compare three countries with more similar policies but varying levels of aggregate income equality. The level of income equality in Australia, the United Kingdom and the United States is less than the OECD average (Förster and d'Ercole 2005), but

because of historical trade union victories, employed Australians still enjoy slightly greater income equality than in the other two countries. Second, we do not limit our analyses to housework (Hook 2010), or child care (Craig and Mullan 2011) or paid work (Pettit and Hook 2009). Instead, we analyze LIS labor force and Multinational Time Use Survey (MTUS) data to examine educational differences in employment hours, core and non-core housework, and, among parents, child care. To assess the extent to which actual care responsibilities structure gendered divisions, we compare paid and unpaid work among all men and women, as well as only mothers and fathers. This nuanced comparative approach reveals that parenthood affects only the magnitude of gender difference. Inherently gendered patterns persist in all three countries, but aggregate income equality shapes the degree of relative equality in paid and unpaid work between women and men, as well as among women and among men.

Education and changing gendered divisions of paid and unpaid work

A male breadwinner model, in which families rely on a man's income to support a dependent wife responsible for the unpaid domestic and care work, is an ideal-type that emerged in the late 19th Century (Lewis 1992) and had its heyday in the decades following World War II (Oppenheimer 1997). Beginning in the 1960s, equal opportunity policies and other victories of second wave feminism increased women's access to education and ability to participate in employment across the life course (McLanahan 2004). Bargaining and time availability models predicted the increase in women's paid work would yield greater gender equality in unpaid domestic tasks (Coltrane 2000).

Empirical evidence revealed that equality gains differed across women and not necessarily as predicted by the models. For example, employment rates of US women with low education tripled between 1960 and 2000, from 10 to 30 percent (McLanahan 2004: 611). Across the same time period, employment rates of women with high education went from 10 to over 60 percent (McLanahan 2004: 611). In addition to their lower employment rates, less-educated women are more likely than highly-educated women to work part-time (Pettit and Hook 2009).

In keeping with predictions of the time availability model, employed women reduced the time they spent doing housework (England 2010; Hook 2010), although most of this reduction occurred prior to the 1990s (Sayer 2010). Yet after controlling for employment hours, less-educated women spend more time in housework than highly-educated women (Hook 2010). As predicted by the bargaining or relative resource models (Coltrane 2000), men's housework time increased across the period, but not to the same extent that women reduced their housework hours (Hook 2010). Additionally, men do more and women do less unpaid work in countries where women's full-time employment rates are higher (Hook 2010; Heisig 2011). Less-educated men spend less time doing housework than highly-educated men (Hook 2010), although men's educational gradient in housework may be narrowing (Sullivan 2010).

If men generally have not increased their housework time to compensate for the decline in women's, where did the housework go? Some disappeared as cleanliness standards may have declined (Robinson and Godbey 1999). Other domestic tasks went to the market, in the form of cleaning services, prepared meals, laundry services, and the like (de Ruijter, Treas and Cohen 2005; de Ruijter and Van der Lippe 2009; Gupta et al. 2010;

Hook 2010), as well as labor-saving household devices such as microwave ovens (Heisig 2011). As highly-educated women are more likely to work and work more hours, they both require and can afford to purchase more market substitutes. Gupta and his colleagues (2010) found that women's higher wages predicted fewer household hours in unpaid tasks, which Heisig (2011) calculated to be about one hour less per day. This contrasts with British and US educated men's increase in housework time between 1975 and 2000 of just 12 minutes per day (Sullivan 2010).

Less-educated women's lower wages limit both the quantity and quality of market substitutes they might purchase to ease the household unpaid work burden. This would explain why less-educated women perform more housework than more educated women even after controlling for employment hours (Hook 2010), and despite the substantial increase in less-educated men's housework time (Sullivan 2010). Market substitutes therefore make greater gender equality in housework a socioeconomic privilege.

Child care time and its educational gradients differ theoretically and empirically (Ferree 1990). Theoretically, relative resources allow individuals to negotiate out of unpleasant tasks such as cleaning the toilet, in favor of spending time in more satisfying activities. So despite the increase in mothers' employment hours, maternal time in child care has either remained relatively stable or increased slightly (Bianchi et al. 2006). Fathers have also increased their time in child care, although not sufficiently to narrow the gender care gap (Gauthier, Smeeding and Furstenberg 2004). Highly-educated parents spend more time with their children than less-educated parents (Bianchi et al. 2006; England and Srivastava 2010; Sayer et al. 2004). For example, between 1975 and 2000, educated British and US fathers increased their child care time more than twice as much as

did fathers with secondary schooling or less (Sullivan 2010: 726). Craig and Mullan (2011) reported that highly-educated parents' divisions of routine, daily care are more equal as well. Educated mothers and fathers therefore spend more time with their children and enjoy slightly more egalitarian divisions of care work than less-educated parents.

The sum of this cross-national evidence highlights that individuals with more education allocate more time to high status activities such as employment and child care, and spend less time in low status activities such as cleaning. They also enjoy greater gender equality in all types of activities, but this depends in part on the availability and acceptability of market substitutes (Baxter, Hewitt and Western 2009; Morgan 2005). One factor affecting the availability of market alternatives, and in turn the educational gradient in gender equality, is the aggregate level of income inequality.

Aggregate income equality and gendered divisions

Aggregate income and gender equality transect in complex ways. Income inequality can enable educated women to achieve greater gender equality, but by increasing the educational gradient in relative equality across women (Evertsson et al. 2009). Aggregate income inequality is greatest in liberal labor markets where individuals are expected to ensure their well-being via employment (O'Connor et al. 1999). Liberal markets reward individual investment in general rather than vocational education, which encourages more women to pursue higher education (Soskice 2005; OECD 2009). Women and men have equal legal rights in the labor market (Evertsson and Neramo 2004), and both genders tend to work longer hours (Sayer and Gornick 2011). The aggregate wage inequality, however, structures a large gender wage gap (Blau and Kahn 2003; Evertsson et al. 2009).

In liberal markets, the state offers limited if any supports for gender employment equality such as paid parental leave and public child care (Evertsson and Neramo 2004). Instead, any reshuffling of unpaid work is also left to market forces, as evident in the prevalence of private child care provision (Morgan 2005). The greater income inequality fosters development of the low-wage service sector that provides such care and other market substitutes for unpaid domestic tasks (Scharpf and Schmidt 2000). The high earnings of educated women allow them to transfer more of their household work to the market (England 2010). As a result, the income-housework gradient is steeper in more unequal countries (Heisig 2011).

Greater aggregate income equality, in contrast, comes with different advantages and compromises. First, wages can only be equalized by limiting labor supply. In strong male breadwinner countries, this was achieved by limiting women's access to paid work and reinforcing their responsibility for the private sphere (Fraser 1994; Lewis 1992). Women face barriers to the vocational training that often dominates in such countries (Cooke 2011; Soskice 2005), while the greater income equality limits all workers' earnings returns to a university degree (Kenworthy 2008). Thus greater income equality caps the relative affluence of more educated workers, which reduces the household income available to purchase market substitutes for domestic tasks. The compressed wage structure also blunts development of the low-wage service sector that can provide affordable market substitutes (Morgan 2005; Scharpf and Schmidt 2000). Consequently, greater income equality can increase the amount of household unpaid work because it raises the cost of outsourcing this work (de Ruijter and Van der Lippe 2009; Hook 2010). Male breadwinner countries

therefore sustain a gendered division of both paid and unpaid labor, but minimize educational gradients among women as well as men.

Yet greater aggregate income equality also forms the cornerstone of more gender-egalitarian countries with extensive state supports for maternal employment (Evertsson and Neramo 2004). These supports minimize the educational gradient in women's employment (Evertsson et al. 2009; Sigle-Rushton and Waldfogel 2007), whereas the greater income equality narrows the gender wage gap (Blau and Kahn 2003; Mandel and Semyonov 2005). The tradeoff, however, is greater gender occupational segregation (Lewis and Åström 1992). The legal right to family-friendly employment inhibits highly-educated women's access to high-paying private sector jobs, which also widens the gender wage gap among the highly-educated (Mandel and Semyonov 2006). And despite greater gender equality in employment hours, gendered divisions of housework (Evertsson et al. 2009; Hook 2010) and child care (Craig and Mullan 2011) remain. So state policy supports for income *and* gender equality might reduce educational gradients across women, and narrow but do not eliminate gendered divisions of paid or unpaid work.

Patterns documented in the literature are based on comparisons of diverse countries such as Germany, Sweden and the United States, which makes it impossible to disentangle aggregate income effects from unmeasured cultural and socio-political effects. We instead follow the comparative method to select more similar countries that diverge on the key dimension of interest (Mahoney and Rueschemeyer 2003), in our case aggregate income equality. Australia, the United Kingdom and the United States share a common language and a basis in British common law, generally adhere to more liberal tenets and so do not

offer the extensive public child care and parental leave programs of Scandinavia (O'Connor et al. 1999). As outlined next, however, they still differ in aggregate income equality.

Three degrees of liberalism

The United States is the quintessential liberal market economy, with an ideological rejection of state interference in private lives or market dynamics (O'Connor et al. 1999). In contrast to the other two countries, the United States developed a system of corporate rather than state welfare, where individuals must be employed to access adequate disability, sickness and health benefits (O'Connor et al. 1999). Most part-time jobs offer fewer benefits, so the majority of US women as well as men works full-time regardless of marital or parental status (Sigle-Rushton and Waldfogel 2007). Yet US women face one of the largest gender wage gaps, reflecting the high degree of overall income inequality (Blau and Kahn 2003; Evertsson et al. 2009). Balancing work and family is also a private matter, with any public child care normally means-tested (Gornick and Meyers 2003).

The United Kingdom is similar to the United States in its liberal ideology regarding men's employment. Yet it also promoted a weak male breadwinner model with social security regulations that led to the development of low-wage part-time work taken up primarily by married women (McKnight, Elias and Wilson 1998). The 1998 National Child Care Strategy further encouraged British mothers' part-time employment by creating more than a half million new part-time public child care places (Eurydice 2009). Parents have a right to request "flexible" working hours until the youngest child reaches the age of six, a right taken up by far more mothers than fathers (Cooke 2011). In 2000, about 40 percent of employed British women worked part-time, as compared with 20 percent of employed US

women (OECD 2010: 289). That same year, the UK gender wage gap of 21 percent was slightly smaller than the 25 percent US gender wage gap (OECD 2010: 295).

Australia is unique of the three countries in that early trade union victories resulted in a strong male breadwinner model where all working men were guaranteed a family wage sufficient for supporting a dependent wife and three children (O'Connor et al. 1999). They also won shorter work weeks than British or US workers (Cooke 2011). Australian women eventually benefited as well through a series of 1960s and 70s arbitration cases that resulted in comparable worth wage policies (O'Connor et al. 1999). In 1979, Australian mothers won the right to up to 52 weeks of unpaid maternity leave, but as in the United States, public child care is primarily means-tested (Cooke 2011). Instead, the Commonwealth government began to promote women's part-time employment as a work-family balance strategy (Edwards and Magarey 1995). As a result of these factors, more than one-third of employed Australian women at the end of the 21st Century worked part-time (OECD 2010: 289), although the quality of these jobs was better than British part-time work (O'Connor et al. 1999). Overall the Australian gender wage gap was a modest 12 percent (OECD 2010: 295).

Aggregate income inequality is therefore greatest in the United States and least in Australia, with both Australian and British policies further encouraging mothers' part-time employment. Because these are all liberal markets, we expect an educational gradient in each of them, for women as well as men. As education increases, we expect women's and men's employment hours, men's housework hours, and mothers' and fathers' child care hours to all increase, and women's housework hours to decrease. What we expect to vary across countries is the size of the educational gradient in each of these patterns, as well as

the resultant degree of gender equality at each educational level, reflected by the size of the gender gap in time spent in each type of work.

The greater income equality of Australia leads us to predict that the educational gradient in paid and unpaid work will be smaller than in the other two countries, for women as well as men (H1a). The greater income equality coincides with a shorter work week for men, which should reduce the size of the gender employment gap (H1b). The greater aggregate income equality also limits the size of the service sector, though, so highly-educated Australian women are predicted to spend more time doing housework than highly-educated British or US women (H1c). The advantage of the greater Australian income equality is therefore the smallest gender employment gap, but with the compromise of the largest gender housework gap.

With the UK's greater income inequality and promotion of women's part-time work, we expect the British educational gradient in women's paid work to be the steepest of the three countries. Highly-educated British and US women and men have similar incentive to work longer hours, so we do not predict much difference for university-educated individuals' employment hours across the two countries (H2a). Rather, we expect less-educated British women to work significantly fewer paid hours than similar US women (H2b). These patterns are predicted to yield a larger gender difference in paid work in the United Kingdom as compared with the United States, particularly at lower education levels (H2c). This should coincide with a larger gender housework gap than in the United States, but not as large as in Australia (H2d).

The United States adheres most closely to liberal tenets, and so all able adults are expected to be employed. Thus we do not expect the educational gradient in US women's

employment hours to be as large as in the United Kingdom (H3a). But the high income inequality increases highly-educated US women's outsourcing possibilities, so we therefore expect the US educational gradient in housework to be the steepest of the three countries (H3b). Less-educated US women will not perform appreciably more housework than similar women in the other two countries (H3c). Instead, highly-educated US women will perform significantly less housework than highly-educated women in the other two countries (H3d). Highly-educated US women and men are therefore predicted to have the smallest gender gap in housework hours (H3e).

How aggregate income equality might affect parents' time investment in their children is new theoretical territory. We make a tentative argument that greater aggregate inequality raises the future risks of a child's "failure," and so provides incentive for highly-educated parents to spend more time with their children to impart socioeconomic advantage. This suggests that intensive parenting (Hays 1996) is a way of reproducing class and should be found more among highly-educated than less-educated parents. It also partly explains the US class differences in parenting found by Lareau (2000). If aggregate income equality shapes these dynamics as we suggest, mothers' educational gradient in child care time should be largest in the United States and smallest in Australia (H4a). Fathers in all three countries and at all levels of education are likely to spend less time in child care than similar mothers. Fathers' incentive to invest in offspring should be similar, however, such that the educational gradient among fathers will also be largest in the United States (H4b).

Method

Data and sample

Data from wave 5.2 of LIS data and version 5.53 Multinational Time Use data are used to predict hours spent in paid employment and unpaid housework and child care. LIS data are used for employment hours because Australian employment time use is provided as categorical data. Wave 5.2 LIS data are from 1999 in the United Kingdom, 2000 in the United States, and 2001 in Australia.¹

Version 5.53 of the Multinational Time Use Survey (MTUS) is a collection of harmonized time-use surveys gathered for 22 countries since the 1960s. We select the MTUS archived data from three nationally-representative surveys: the 2003 American Time Use Study, the 1996 Australian Time Use Survey, and the UK 2000 Time Use Survey. In time diaries, respondents record or report all daily activities. The advantage of MTUS is that country activity codes are harmonized into a 40-category typology (Gauthier, Gershuny and Fisher 2006). There are some differences in sample design and survey administration, but estimates of most daily household tasks have been found to have high validity across different types of survey instruments and methodologies (Coltrane 2000).

Our sample is prime working-age adults between the ages of 20 and 54, excluding those still in school. At the younger age, those who completed compulsory schooling and have no immediate plans for further education would already be in employment, whereas many university graduates begin their careers around age 21. The top age of 54 is chosen as countries have some public or private options for early retirement beginning at age 55.

¹ Additional technical details are available online for LIS (<http://www.lisdatacenter.org/>) and MTUS (<http://www.timeuse.org>) data.

We also select a sub-sample of individual parents only in each dataset to analyze parental patterns of paid and unpaid work including child care.

Variables and analytic strategy

The dependent variables are weekly hours in 1) employment, 2) core housework, 3) non-core housework, and, 4) among parents only, child care. Weekly employment hours in the LIS data are top-coded at the 99th percentile for each country. The MTUS core housework variable includes time spent cooking, setting the table and cleaning up after meals, general inside and outside cleaning, laundry, and ironing. Non-core tasks include household and automotive maintenance, gardening, pet care, paperwork, and other miscellaneous tasks not included in core housework.

The MTUS child care measure reflects a parent's summed time in primary child care activities across a 24 hour day, including physical care of children, reading to and playing with children, helping children with their homework, teaching them how to do an activity, providing medical care to children, and general supervision. The MTUS harmonized child care time measure does not include time spent driving children places, or time in "secondary" activities such as monitoring children while the adult is doing something else, as there is greater inconsistency in this reporting across countries. Activity based measures are therefore valid and reliable approaches to assessing time in specific activities, but they are also limited reflections of total time investments in children (Folbre et al. 2005).

The key independent variable is education. Education measures are standardized based on ISCED codes.² Less than high school is defined as individuals with ISCED level 2

² http://www.unesco.org/education/information/nfsunesco/doc/isced_1997.htm

or less. In Australia and the United Kingdom this includes completion of compulsory lower education at around age 15 or 16, whereas in the United States it indicates high school (or earlier) drop outs. A second indicator denotes individuals with ISCED levels 3 or 4, which includes those who have completed upper secondary (high school in the United States), or some post-secondary education short of a bachelor's degree; neither dataset allows us to distinguish between these two. The final education category is ISCED 5 or above, a proxy for a university degree and above.

All models include an indicator variable for those individuals living with a partner, although whether it is a *de jure* or *de facto* partner cannot be discerned in every country dataset. All models include two child variables. The first is a continuous measure indicating the total number of children younger than 18 living in the household. The second is an indicator for parents with a child younger than five years of age, as the gendered division of paid and unpaid labor tends to be greater in the years before compulsory schooling (Gornick and Meyers 2003).

The LIS data provide continuous measures of age, so it and its square are included as proxies for work experience (Mincer 1979). The Australian time use data provide only five-year age categories, so the British and US time use continuous age measures are converted to the same seven five-year categories (category 1 = ages 20 to 24, ... category 7 = ages 50 to 54), and its square to be consistent with the LIS modeling. As these are control variables, the different metrics are not considered problematic when comparing results for key variables from LIS and MTUS models.

Time spent in unpaid housework and child care varies with an individual's employment (Coltrane 2000). Therefore analyses of unpaid time include two further

control variables: one indicating individuals employed part-time, and another indicating those employed full-time. A further control is included for weekend diary collection in the MTUS data, as more time can be spent in unpaid activities on the weekend. Weighted descriptive statistics are reported in Table 1, with the LIS data presented in the top panel and MTUS data in the bottom panel.

[Table 1 about here]

With the LIS employment hours data, a zero answer means the man or the woman spend no hours in employment. With time use data, however, a zero answer might indicate that the person never performs the task (true zeros), or that they had not performed the task at the time asked to record their activities (Frazis and Stewart 2010). Tobit models were initially thought to compensate best for the presence of zero values, but recent simulations indicate they result in biased estimates (Stewart 2009). Hook (2010: 1496) advocated using Poisson regression models and an over-dispersion parameter to approximate a negative binomial model. We analyzed the time use data with all of these approaches, but results did not differ substantively from those derived from ordinary least squares (OLS) regression models. Hence, we follow Stewart's (2009) recommendation of OLS models because they provide unbiased estimates, are more robust to distributional violations compared to other analytic strategies, and produce easily interpretable results.

We analyze the LIS data and MTUS data separately, but pool the individual-level country data within each dataset and use OLS regression to predict time in the various types of work controlling for the variables noted above. STATA's "margins" commands are then used to predict hours in each type of work by country, gender and education and test for statistically significant two- and three-way interactions.

Individual women's and men's predicted weekly hours in each type of work by educational level are displayed in the top panel of Figure 1, with the gender time gap (women's minus men's hours) in these displayed in the bottom panel. The same information for parents only is displayed in Figure 2.

Paid work in context

The educational gradient in employment hours is similar and statistically significant for women as well as men. Across the three countries, the least-educated men are predicted to work about 10 fewer hours per week than the most highly-educated men, whereas the least-educated women are predicted to work about 11 fewer hours per week than highly-educated women. These similar gender employment educational gradients, however, build on gendered bases. The predicted weekly employment hours of women with university degrees or higher in all three countries are similar to those predicted for the least-skilled men. These education and gender gradients hold when comparing predicted hours among only employed individuals (results available from authors).

As expected, Australian men at each level of education work significantly fewer hours than men in the other two countries, with a similar but less acute pattern among Australian women. The net impact of these employment time trends is that the Australian employment hours educational gradient is less pronounced than in the other two countries, as predicted. As evident in the bottom panel of Figure 1, these trends also result in Australia having the smallest gender *gap* in employment hours.

British employment patterns differ significantly from the other countries in two ways. First, British men work more hours than their Australian and US counterparts,

particularly British men with an upper secondary or some post-secondary education. Yet British men's educational gradient is of a similar magnitude to that in the other countries. In contrast, the educational difference between the least- and most highly-skilled British women is the greatest of the three countries. As predicted, highly-educated British women work about as many hours per week as highly-educated US women. It is the least-skilled British women that work fewer hours than women in the other two countries, although the difference with Australia's least-skilled women is not statistically significant. The overall pattern yields the largest gendered division of paid work of the three countries, particularly for the least-skilled (bottom panel Figure 1).

The US educational gradient among women is more similar to Australia than the United Kingdom. US women with high school education or less work more hours than similar women in the other two countries, although the difference with the least-skilled Australian women is not statistically significant. The educational gradient in US women's employment hours is therefore not as extreme as in the United Kingdom. Unique among the three countries is that the US gender employment time gap for the most highly-educated women is in fact slightly larger than the gap for those with moderate levels of education. As US men work slightly fewer hours than British men, the US gender employment time gap is more similar to Australia's than the United Kingdom's, particularly among those with secondary education or less (bottom panel Figure 1).

[Figure 1 about here]

Unpaid work in context

Figure 1 also displays the educational gradients in core and non-core housework. Core housework is as gendered as employment. On average, the least-educated women spend

about 16 hours per week doing housework, as compared with similar men's five or six hours per week. Among men, the British spend the most time doing housework, one to two hours more per week than their Australian and US counterparts depending on educational level. Australian and British men with a university degree do more housework as compared with their same-country counterparts with less education, about one hour more per week. US men's educational differences in housework are not significant, however, and US men with a high school or university degree do significantly less housework as compared with similar Australian and British men. Still, in all three countries, men's educational gradient in housework is appreciably smaller than the educational gradient in employment hours.

For women, the decrease in core housework as education increases is more pronounced. University-educated women in all three countries spend significantly fewer hours doing housework than less-educated women. As predicted, the least-educated US women spend about the same amount of time doing housework as similar Australian and British women. Yet university-educated US women spend five fewer hours per week doing housework than the least-educated US women, as compared with a reduction of just two hours per week in Australia and the United Kingdom. In the United States, the difference between women with a high school degree and those with less than high school is also statistically significant.

As evident in the bottom panel of Figure 1, these dynamics lead to Australia having the largest gender housework gap regardless of a woman's educational level. The British gender gap is slightly smaller at all levels of education, whereas the US gap is similar to the Australian gap among the least-educated. US women's steep educational gradient means

that the gender gap narrows more among the highly-educated than in the other two countries, despite the absence of an educational gradient in US men's housework.

Individuals spend little time in non-core activities, but their educational gradients differ from those for all other types of work. In all three countries, men spend more time doing non-core housework than women, although contrasts between American men with less than high school education and American women with a high school or university education are not significant. There is no educational gradient in Australian or British men's non-core housework. In the United States, however, men with high school or some college spend significantly more time doing non-core housework than either more- or less-educated US men. Similarly, there is no significant educational gradient among Australian and British women's non-core housework, whereas US women with high school and university education spend significantly more time doing non-core housework than the least-educated US women.

Parents

Predicted parental hours in each type of work and child care are presented in the top panel of Figure 2, with the gender time gap in these displayed in the lower panel. In general, the employment, core and non-core housework patterns are as for the entire sample, but gender differences are more pronounced. Among men, being a father predicts slightly greater employment hours in the United Kingdom and United States, but not Australia. In contrast, Australian and British mothers' employment hours are significantly fewer than US mothers, on a magnitude of seven hours per week.

Mothers spend significantly more hours doing core housework than childless women, yet this decreases as education increases in all three countries. Moderately-educated fathers spend more time doing housework than the least-educated or most highly-educated fathers. As evident in the bottom panel of Figure 2, parenthood thus magnifies a gendered division of paid and unpaid work before considering child care. Yet relative educational gradients across the countries do not change: The gender employment gap is greatest among British parents, whereas the gender housework gap is greatest for Australian parents.

[Figure 2 about here]

Child care educational gradients and resultant gender care gaps differ. The least-educated mothers spend between 7.5 (UK and US) and 9 (Australia) hours per week in child care. University-educated mothers in all three countries spend more time in child care than less-educated mothers, but as predicted, the increase is greatest among US mothers. University-educated US mothers do about twice as much child care compared with US mothers with less than high school education—almost seven hours per week more—and about three hours more than those with a high school education. US mothers with a high school education do similar amounts of child care as university-educated British and Australian mothers.

Among fathers, there is an educational gradient in Australia and the United States, but not the United Kingdom. The least-educated fathers in all three countries spend about four hours per week doing child care. University-educated Australian fathers increase their child care time to more than seven hours per week, and similar US fathers spend almost 8.5 hours per week. As a result of these effects, the Australian gender gap in parental child care

time stays fairly constant across educational levels and even declines slightly at the highest level of education, as evident in the bottom panel of Figure 2. Australian parents thus enjoy greater equality in child care time at higher levels of education than parents in the other two countries. The greater gender care gap among university-educated British parents is because mothers, but not fathers, spend more time in child care than less-educated parents. The US gender care gap stems from both university-educated parents increasing their child care time, but US mothers increase it more than fathers.

The overall effect of the educational gradients in the various “work” patterns is that Australian women and men at higher levels of education enjoy more leisure time than similar British and US individuals. US mothers at every level of education spend more total time in non-leisure activities than mothers in the other two countries. Yet despite the long hours, British and US mothers at every level of education spend less total time in paid and unpaid work than similarly-educated fathers.

Discussion and conclusions

Aggregate income inequality, not uneven benefits from second-wave feminism, shapes educational differences in relative gender equality in paid and unpaid work. Greater aggregate income inequality enhances earnings returns to higher education and supports the development of market substitutes for unpaid domestic tasks. To illustrate these effects, we compare the educational gradient in women’s and men’s time in paid and unpaid work in Australia, the United Kingdom and the United States. All three are liberal labor markets with little policy intervention in individuals’ market relationships, but aggregate income equality is slightly greater in Australia and least in the United States.

In the context of greater aggregate income equality, Australian women as well as men at all levels of education enjoy more leisure time because of fewer employment hours. The fewer employment hours among Australian men also narrows the gender employment gap, particularly among those with university degrees. The compromise with greater aggregate income equality is fewer outsourcing possibilities, such that Australian women at all educational levels spend more time in housework than similar British or US women. This results in a greater gender housework gap than in the latter two countries.

The greater US aggregate income inequality, in contrast, results in greater employment hours among the least-skilled women as compared with Australia and the United Kingdom, and fewer employment hours among university-educated US women as compared with their counterparts in the other two countries. With only a minimal welfare state safety net, the least-educated US women, including mothers, have employment incentives. At the same time, the greater aggregate income equality enhances the earnings of university-educated women, allowing them to reduce their employment hours, displaying what economists refer to as “income effects” that predict fewer work hours. US men’s employment hours, however, increase with education. The net result of these gendered employment patterns is little educational variation in the US gender employment gap, a finding which contradicts McLanahan’s (2004) assertions as to greater educational differences in relative gender employment equality.

The greater aggregate income inequality does enable university-educated US women to outsource more housework. Because of this, university-educated US women enjoy a smaller gender housework gap even though US men regardless of education spend the least amount of time doing housework as compared with Australian and British men. This

finding lends no support to McLanahan's (2004) assertion that university-educated women have the greater resources to bargain with their partners for greater equality in unpaid work. Educated US women simply purchase greater housework equality (see also Gupta et al. 2010), an option made possible by the aggregate income inequality.

British policies encourage women's part-time employment whereas British men at each level of education work longer hours than Australian or US men. These gendered dynamics create the largest gender employment gap at all levels of education as compared with Australia or the United States. Despite this lack of aggregate gender employment equality, British men regardless of education spend more time doing housework than men in the other two countries. This narrows the British housework gap to close to US levels, but because of British men's behavior not purely market solutions.

Non-core housework patterns diverge from the rest, with no significant educational gradient found for Australian and British women or men. US men with a high school degree or some college spend significantly more time in non-core activities than other men. US women with high school and university education spend significantly more time doing non-core housework than the least-educated US women. A possible reason for these patterns is that non-core housework includes gardening, automotive maintenance, pet care, and home repairs and decorating, activities which are often hobbies. Thus what time use surveys categorize as non-core housework might more realistically be considered leisure activities for many people. Future research might explore varying educational differences in these hobbies depending on the country.

Child care patterns also vary across the three countries. We tentatively hypothesized that greater inequality provides incentives for educated mothers as well as fathers to invest

more time with children to ensure their continued socioeconomic privilege. As predicted, the educational gradient in child care is therefore steepest in the United States. The least-educated US parents devote a similar amount of time to child care as British parents, but the increase in US mothers' and fathers' time is significant at each additional level of education. University-educated British mothers, but not fathers, also spend significantly more time doing child care. The British and US gender care gap therefore increases with education, but for different reasons. In Australia, mothers and fathers similarly increase their child care time as education increases, resulting in a fairly constant child care time gap regardless of parents' education. None of this evidence supports McLanahan's (2004) assertions that educated women enjoy greater parenting equality.

Two over-arching patterns bear note. First, McLanahan (2004) suggests that greater education is unilaterally positive, but Figures 1 and 2 clearly illustrate that what is sacrificed as education increases is leisure time. Australia's greater aggregate income equality blunts the market employment incentives, offering university-educated parents greater quality of life than in the other two countries. The greater aggregate inequality of the United Kingdom and United States results in incentives for longer employment and child care time as education increases, making the "time bind" (Jacobs and Gerson 2004) an educational penalty. The UK's policies encouraging women's part-time employment shift more of the employment burden to UK men simultaneous with sustaining gender inequality. This does not seem fair to either gender.

Finally, one surprising pattern is that, despite their long hours, British and US mothers at every level of education spend less total time in paid and unpaid work than similarly-educated fathers. While the difference is not sufficiently large to argue it is now

men who face Hochschild's (1989) "second shift," men's time struggles are worthy of note and should be explored in future research. In Australia, although time allocations remain gendered, employment and child care gaps are more equal, as is women's and men's total non-leisure time. These findings indicate that gender equality will remain elusive if the aggregate income inequality of liberal markets continually moves the "work" bar for both men and women.

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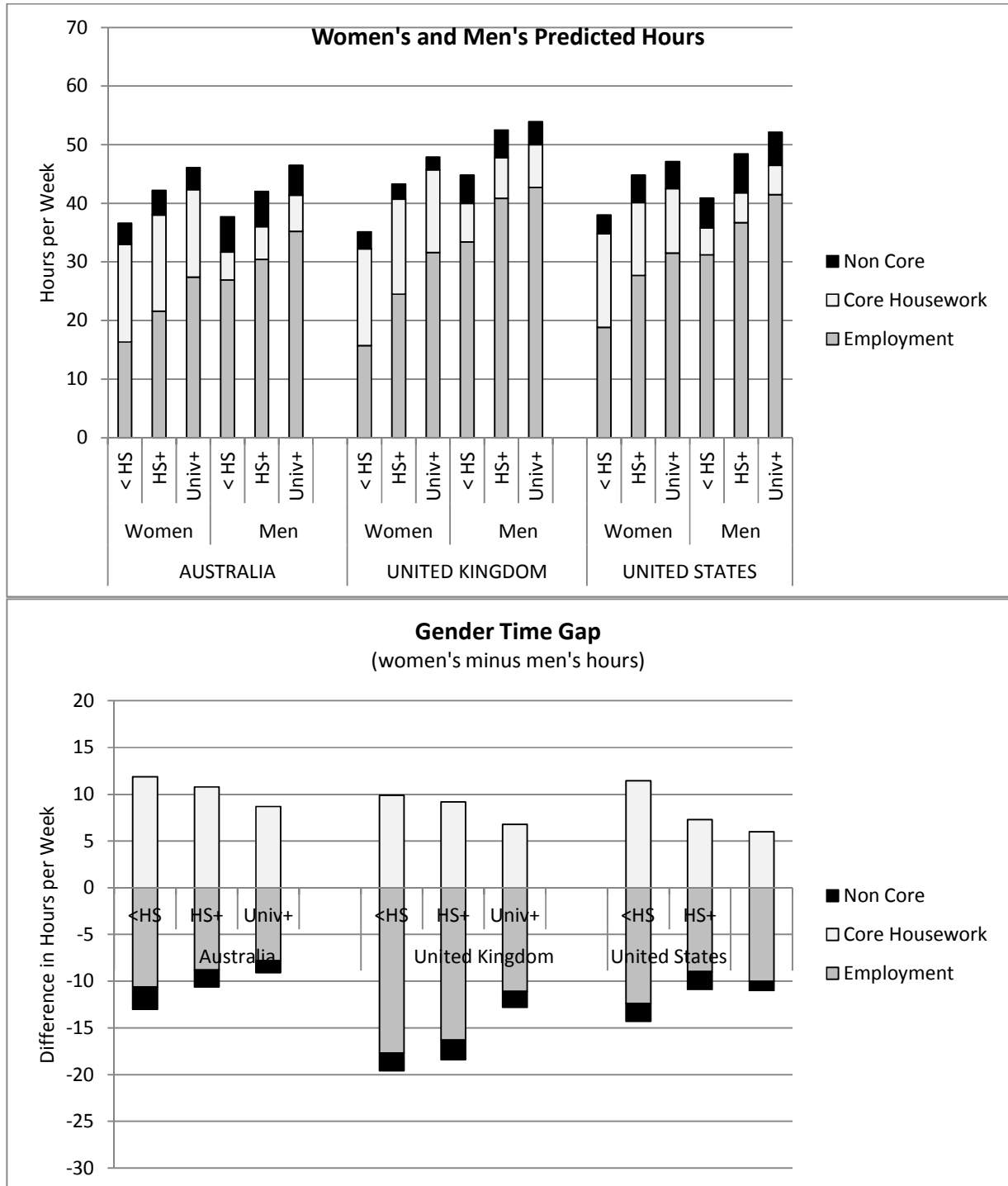
Table 1. Descriptive statistics for 20 to 54 year old Australian, British and US men and women circa 2000

LIS DATA	Australia		United Kingdom		United States	
	Women	Men	Women	Men	Women	Men
<i>N</i>	4,328	4,056	13,941	12,688	31,814	29,402
Employed	.63	.73	.70	.85	.73	.86
Weekly work hours	20.17 (18.40)	29.96 (19.86)	23.28 (18.87)	39.15 (19.33)	27.51 (19.07)	37.08 (17.76)
Lower secondary education or less	.52	.44	.29	.28	.13	.14
Upper secondary and some post-secondary	.30	.38	.54	.51	.62	.60
University degree+	.18	.18	.17	.21	.26	.26
Partnered	.65	.64	.58	.58	.61	.59
Parent	.53	.46	.56	.48	.57	.50
Number of children	1.02 (1.13)	.89 (1.17)	1.06 (1.16)	.91 (1.13)	1.10 (1.25)	.97 (1.22)
Child < 5 (1=yes)	.22	.20	.23	.20	.23	.21
Age	37.33 (9.63)	3.39 (9.72)	37.72 (9.41)	38.11 (9.39)	37.34 (9.73)	37.24 (9.79)
MTUS DATA	Australia		United Kingdom		United States	
	Women	Men	Women	Men	Women	Men
<i>N</i>	4,719	4,319	5,153	4,060	6,108	4,879
Employed	.67	.87	.73	.89	.75	.91
Employed part-time	.27	.06	.33	.03	.19	.05
Lower secondary	.35	.25	.34	.33	.09	.10

education or less						
Upper secondary and some post-secondary	.51	.59	.51	.48	.58	.55
University degree+	.15	.16	.15	.20	.33	.35
Core housework hours per week	17.1 (13.8)	5.0 (7.5)	17.5 (12.7)	6.1 (7.7)	12.9 (14.0)	4.6 (9.2)
Non-core housework hours per week	4.3 (7.8)	5.1 (10.3)	2.9 (7.0)	4.3 (10.3)	4.6 (9.1)	5.6 (11.8)
Child care hours per week (all individuals)	7.0 (12.5)	2.3 (6.4)	5.8 (10.2)	2.4 (6.0)	8.0 (12.7)	3.6 (8.3)
Partnered	.72	.68	.77	.84	.68	.73
Parent	.42	.36	.60	.55	.66	.59
Number of children	.89 (1.19)	.78 (1.15)	1.13 (1.16)	1.03 (1.15)	1.25 (1.27)	1.13 (1.19)
Child < 5 (1=yes)	.18	.15	.22	.22	.28	.26
Age categories*	3.98	3.94	4.24	4.41	4.34	4.42
Weekend diary	.28	.28	.29	.29	.29	.29

Note: Standard deviations not presented with percentages. *In the MTUS data, age is included as a seven-category variable with values of 1 = ages 20-24, 2 = ages 25-29, ... to 7 = ages 50 to 54.

Figure 1 Women's and men's predicted hours in paid and unpaid work (top panel) and the gender time gap in each type of work by education (bottom panel), LIS and MTUS data circa 2000



Notes: Controlling for age, age squared, partnership, number of children and whether there is a child younger than 5 in the household.

Figure 2 Mothers' and fathers' predicted hours in paid and unpaid work (top panel) and the gender parental time gap in each type of work by education (bottom panel), LIS and MTUS data circa 2000

