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Fatherhood, Motherhood and Time Pressure in Australia, Korea and Finland

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Abstract

Using nationally-representative Time Use Surveys from Australia, Korea and Finland (n=19127 diaries) we examine how parenthood and age of the youngest child are associated with the recuperative activities of leisure and sleep, the productive activities of market and non-market work, and with subjective time stress. Time stress differences by fatherhood are greatest for Finns and least for Koreans; time stress differences by motherhood are absent for Finns and high for Australians and Koreans. Results of the comparative analysis suggest that social policy and average national working hours produce different gendered gaps in both objective and subjective time stress among parents.

Fatherhood, Motherhood and Time Pressure in Australia, Korea and Finland

As work and family demands have escalated over recent decades, time scarcity has become a pervasive feature of contemporary life (Jacobs and Gerson 2004). Central to the issue is the growing work force participation of women, which has added to family workloads (Bianchi, Robinson, and Milkie 2006, Jacobs and Gerson 2004, Strazdins et al. 2011, Sullivan 2014). Mothers' and fathers' child caregiving time has also gone up (Buddelmeyer, Hamermesh, and Wooden 2017, Sayer 2016), meaning that both work *and* family time demands have grown. Escalating time pressures upon contemporary families are widely noted in both academic and popular discussions with employed parents of young children, especially, reporting extremely high levels of time stress (Bianchi and Milkie 2010, Edwards and Wajcman 2005, Mattingly and Sayer 2006, Presser 2005, Schulte 2014).

Time stress has been described as having a large amount of time committed to activities, particularly market and nonmarket work, and not enough time to meet all duties and responsibilities (Kleiner 2014, Roxburgh 2004). Research frequently operationalizes it as the objective amount of time spent (see, for example, Kalenkoski, Hamrick, and Andrews 2011, Sullivan and Gershuny 2013). However, others emphasise that time stress is also subjective, involving perceived strain or tension, and draw on survey questions which directly ask respondents how often they feel rushed or pressed for time (see, for example, Hamermesh and Lee 2007, Kleiner 2014, Mattingly and Sayer 2006). In this paper we analyse both dimensions of time stress, because although objective and subjective time pressure are closely related, they are conceptually distinct (Giminez-Nadal and Sevilla Sanz 2011). One records behaviour and the other self-reported feelings, yielding insight into how time demands are experienced. This is important because feeling constantly rushed and harried - experiencing subjective time stress - adversely affects wellbeing, and threatens mental health (Kleiner 2014, Strazdins et al. 2011). Subjective time stress is thus a key supplementary aspect of parental welfare (Rose, Hewitt, and Baxter 2013). It is well known that men and women respond to the demands of parenthood differently, with women doing the bulk of domestic work and care and men devoting longer hours to employment (for overviews see Bianchi and Milkie 2010, Monna and Gauthier 2008). Mothers also report that it is not only the practical demands of domestic work and care that are tiring. Also fatiguing is the mental labor of planning and organizing the housework and childcare (Buddelmeyer, Hamermesh, and Wooden 2017, Folbre et al. 2005, Walzer 1998, Williams 2001), which may also diminish leisure quality (Mattingly and Bianchi 2003). Although expectations of fathers have shifted from being financial providers to being more actively involved in child-raising (Altintas and Sullivan 2016, Doucet 2006, Sayer 2016), gender differences in who is responsible for managing the work-family nexus likely generates differential time stress for mothers and fathers.

The pressures associated with having and raising children do not occur in a social vacuum, however. Paying attention to the context in which parenting occurs offers the potential to identify conditions that make the consequences of parenthood more gender-equal. For example, work-family policies, including cash benefits, subsidized childcare services and time-related supports including paid parental leave and working time arrangements influence women's workforce participation (Lewis 2009) and how mothers and fathers can share responsibility for care (Gornick and Meyers 2003). Cross-national variation in such factors means that economic motherhood penalties are wider in some countries than others (Budig and England 2001, Budig, Misra, and Boeckmann 2012, Waldfogel 1998). There is reason to expect that the stress of having children, including subjective time pressure gaps between parents and nonparents, and between mothers and fathers, are similarly variable because the objective time demands of parenthood are not uniform. For example, time use studies have found larger differences between the total market and nonmarket labor of couples with children and couples without children in Anglo than in Scandinavian countries (Craig and Mullan 2010) and that the impact of parenthood on the gender division of labor is not pronounced in Sweden (Dribe and Stanfors 2009) but is in Australia and the United States (Yavorsky, Kamp Dush, and Schoppe-Sullivan 2015). Also, Anglo countries have longer average full time working hours than European and Scandinavian countries (Craig and Mullan 2010, Gershuny and Sullivan 2003). This means that changes in time allocation occasioned by parenthood build upon an already high household commitment to paid work, making subjective time pressures more likely in the former than the latter.

In addition to social policy and institutional factors, social norms are also pertinent (Gornick and Meyers 2003). Policy and workplace arrangements inform and reflect social attitudes about appropriate gender roles (Lewis 2009), including ideas about the amount of attention children need and who should best provide it (Sayer, Gauthier, and Furstenberg 2004). For example, in Anglo countries child raising is conceptualised as a private responsibility (Orloff 2006, Sainsbury 1996). Particularly among the middle class, the ideology of intensive mothering and the idea that children need 'concerted cultivation' through parent-arranged enrichment activities is strong (Clawson and Gerstel 2002, Faircloth and Murray 2014, Lareau 2003, Hays 1998). Qualitative research on mothers finds those in the United States feel personally responsible for childcare, have high expectations of themselves as mothers, and report that time scarcity is a constant and pressing issue in their lives (Collins 2015). In Western Europe and the Nordic countries, where child raising is seen as more of a collective social responsibility, short full time working hours and affordable public childcare facilitate greater gender symmetry in market and nonmarket work and increase parental leisure time for both genders (Gornick and Meyers 2003, Lewis 2009), mothers may feel more relaxed. Social attitudes and public rhetoric encourage fathers to be centrally involved in raising children (Buddelmeyer, Hamermesh, and Wooden 2017, Lammi-Taskula 2008), also potentially reducing mothers' time stress.

This paper adds to knowledge on parenthood and gendered time allocation by using comparative analysis to identify contextual factors associated with differential gender patterns in both objective and subjective time stress. A conceptual framework for comparative analyses has been developed by categorising countries into typologies according to how they draw on the pillars of welfare: states, markets and families (Esping-Andersen 1990, Esping-Andersen 2009, O'Connor, Orloff, and Shaver 1999). Esping-Andersen (1990) originally proposed that de-commodification, the degree to which people can be independent of market work, should be the major differentiating marker of welfare regimes. However, feminist scholars pointed out that the concept failed to adequately acknowledge the family's place in providing welfare and care and thus ignored a major dimension of social risk for women: whether they have the freedom to provide or to not provide caring services outside the labor market. The crucial relationships, this body of work argued, are not only between paid work and welfare, but between paid work, unpaid domestic work and welfare (Arts and Gelissen 2002, Crompton 2006, Lewis 1997, O'Connor, Orloff, and Shaver 1999, Sainsbury 1996). Consequently, familialization - the degree of social reliance upon on family (women's) care - became an essential further criterion for categorising welfare regimes (Arts and Gelissen 2010, Esping-Andersen 2009, Korpi, Ferrarini, and Englund 2013).

Welfare regime categories are essentially heuristic and are neither exclusive nor immutable. Nonetheless they can yield insights into associations between broad policy settings and the relative welfare of individuals and families in different countries (Arts and Gelissen 2010). Understanding both social policy and institutional arrangements and social norms is key to gender-sensitive welfare regime analysis and here we select three countries which differ on these dimensions: Australia, Finland and Korea. Australia is usually categorised as a liberal/market based Anglo country in which welfare is residual and working-age income support tightly means tested (Arts and Gelissen 2002, 2010). However, this commodification co-exists with familialistic features, notably high levels of unpaid domestic work and care by women in the private sphere (Craig and Mullan, 2010). Finland is an example of a non-familialistic social democracy in which social services are state-provided or -subsidized, reducing the reliance on household care provision and encouraging female work force participation (Lewis 2009, Gornick and Meyers 2003). Korea, which exhibits liberal/market-oriented features including sparse social income support for job loss and familialist characteristics including heavy reliance on women performing unpaid care and housework in families, has been classed as liberal-familialist (Kwon 2005, Lee 2005, Ochiai 2009). Because no country conforms exactly to type, Table 1 summarizes some of the multiple institutional features likely to influence the time impacts of children, and how they fall by gender.

Table 1: Features of social and institutional context in Australia, Korea and Finland

	Australia	Korea	Finland
Social policy and institutional arrangements			
Labor market			
Male employment rates aged 15-64 2009 (%)[1]	77.8	73.6	68.9
Female employment rates aged 15-64 2009 (%)[1]	66.3	52.2	67.9
Female part-time employment 2013 (%)[1]	38.1	16.2	16.7
Percentage of men who usually work 40+ hours 2011[1]	62	85	53.9
Gender wage gap in median earnings of full time employees 2009[6]	16.4	38.6	19.7
Statutory paid parental leave (FTE weeks)[1]			
Maternity and parental for mothers	0	25	40.6
Paternity and parental for fathers	0	7.2	5.7
Childcare and education			
Public expenditure on formal childcare % GDP 2009[3]	0.6	0.7	1.1
Enrollment rates for formal childcare/early education 2008 (%)[4]			
Children 0 - 2 years	29	19	28
Children 3 - 5 years	55	83	73
Intended instruction hours per year in public education 2011[5]			
Primary education	6674.3	3794.7	3754.9
Lower secondary	4035.4	2550.0	2569.3
Students attending after school lessons 2009 (%)[5]	12	66	7
Social norms (% strongly agree/agree)			
Attitude to childcare: "when a woman works children suffer"[7]	21.1	55.2	-
Attitude to work: "when jobs are scarce, men should have more right to a job than women"[8]	13.7	36.4	9.6

Notes: Time periods closest available match to the available Time Use Data

1. OECD Family database. (http://www.oecd.org/els/soc/LMF_1_6_Gender_differences_in_employment_outcomes.xlsx) For Korea KOSIS (Korean statistical database) 2009 all women aged 15 and above
2. OECD Family database(http://www.oecd.org/els/soc/PF3_1_Public_spending_on_childcare_and_early_education_Dec2014.xls)
3. OECD Family database (http://www.oecd.org/els/soc/PF3_2_Enrolment_childcare_preschool.xlsx) Korea aged 3-5 2010.
4. OECD (2013) Education at a Glance (http://dx.doi.org/10.1787/888932847754)
5. OECD (2010) PISA 2009 Results: What Makes a School Successful? Resources, Policies and Practices (Volume IV) (http://dx.doi.org/10.1787/9789264091559-en
6. OECD Family database(http://www.oecd.org/els/family/LMF_1_5_Gender_pay_gaps_for_full_time_workers.xlsx) 2010[8]
7. World Values Survey 2010-2014 Wave 6 (http://www.worldvaluessurvey.org/wvs.jsp)
8. World Values Survey 2005-2009 Wave 5 (http://www.worldvaluessurvey.org/wvs.jsp)

Work-time regime is a central feature of institutional context, because it shapes time constraints within which parenting occurs. Paid work is known to be related to subjective time pressure: longer employment hours cause people to feel more rushed, harried and short of time (Hamermesh and Lee 2007, Kleiner 2014, Mattingly and Sayer 2006). Both workforce participation and work hours differ substantially amongst countries and do so in gendered ways (see Table 1). Consistent with a familialistic approach, female employment rates are lowest in Korea (52%). Overall female participation rates in Australia and Finland are similar at about sixty-eight percent but, suggesting a higher degree of familialization in the former than the latter, thirty-eight percent of Australian women work part time, compared to about sixteen percent in Korea and Finland. For men, employment rates are highest in Australia and lowest in Finland, and there is substantial contrast in the length of the average working week. Eighty-five percent of men in Korea work over forty hours a week, substantially higher than men in Australia (62%) and Finland (54%).

There is very large disparity in the gender wage gap for full time workers across the countries, with Korea extremely high at thirty-nine percentage points. The other countries' gaps are also substantial, with Finland (19.7) wider than Australia (16.4). The gap in Finland may reflect occupational segregation, which is quite marked in Scandinavian countries, where women are much more likely than men to work in care and social services (Orloff 2009).

Affordable, accessible non-parental childcare lowers the direct time demands of parenthood and underpins female workforce participation (Gornick and Meyers 2003). Finland spends more than one percent of their Gross Domestic Product (GDP) on formal childcare/early education, whereas at the time of data collection

Australia and Korea spent 0.6 and 0.7 percent respectively. In 2008, compared to Australia and Finland, attendance rates for Korea were lowest for children aged 0-2 years, but highest for those aged 3-5 years. Enrollment rates were similar in Australia and Finland for the younger age group (29 and 28 percent respectively). However, the rates diverge markedly for children over two: seventy-three percent for Finland versus fifty-five percent in Australia, where families pay very high fees for childcare (Adamson and Brennan 2014). The patterns may reflect that generous paid parental leave (see Table 1) allows Finnish mothers to care full time for the first period of their children's life and then return to their prior employment, whereas in Australia, few mothers have such job-secure leave provisions (Craig and Mullan, 2010). Informal care by family and friends is low in Finland, but in Korea and Australia over thirty percent of young children receive regular grandparent care (Ahn and Shin 2013, Craig and Jenkins 2015, Lammi-Taskula 2008). In-home care by nannies is uncommon in Finland and Australia but is used by Korean parents of infants to supplement maternal or grandmaternal care (Ahn and Shin 2013, Adamson and Brennan 2017).

The time children spend in educational activities may impact parental time, particularly when these activities occur outside of normal school hours. Intended instructional hours are considerably more in Australia than Korea and Finland, but the number of Korean children who spend time in out of school lessons is high (See Table 1). In 2011 eighty-one percent of primary aged children in Korea received private tutoring across all subjects outside of school hours (OECD 2014).

Social attitudes to gender, work and childcare also vary (see Table 1). In Australia, twenty-one percent of those surveyed agreed with the statement that 'children suffer when women work', whereas fifty-five percent of Koreans did so. Data from Finland was not available for this measure. Asked whether men have a greater right than women to work when jobs are scarce, thirty-six percent of Koreans agreed, compared to fourteen percent of Australians and ten percent of Finns.

Summary and research focus

Taken together, these social indicators, norms and institutional features suggest that of the three countries, Finland is the least familialistic and most progressive in promoting gender equality, Korea is the most familialistic and least gender-progressive, and Australia falls in between. Does it mean that the time pressures associated with motherhood and fatherhood are different in each?

To find out, we first establish average national patterns in four types of time use - leisure, sleep, paid work and unpaid work (domestic labor and care), and investigate associations between gender, parenthood and time spent in each. To our knowledge, no prior research has examined associations between parenthood and all four activities together, so we can offer a fuller picture of objective parental time adjustments than previously available. Paid work, housework and childcare, which are productive and effortful activities, increase time pressure (Hamermesh and Lee 2007, Kleiner 2014, Mattingly and Sayer 2006), while recuperative activities such as leisure and sleep are likely to ameliorate it (Hurst 2008, Plage, Perales, and Baxter 2016). Thus, all four activities are important to understanding objective time pressure. To see how the time impacts of parenthood relate to children's age, we compare these objective measures in each country for men and women without children and with young children aged 0-4, 5-9 and 10-14. We then identify within-country associations between parenthood, age of youngest child, and odds of being *subjectively* time stressed, and whether associations differ significantly for men and women within each of the three countries.

Data and Method

Data

We use nationally representative Time Use Surveys (TUS) of Australia (2006), Korea (2009) and Finland (2009) conducted by the national statistical agency of each country. All collected information through a self-completed time diary covering weekdays and weekend days. The Australian and Korean TUS collected data over two consecutive days while the Finnish TUS collected data for one weekday and one weekend day. We

drew a sample of twenty- to-fifty-four-year-old men and women from couple households with and without children, consisting of 9039 men's and 10088 women's diaries (Australia = 2021 male, 2412 female, Korea = 5922 male, 6354 female, Finland = 1096 male, 1322 female). It is a limitation that in households with children, the data capture co-residence only, and do not give information on biological parenthood or whether the parents have other children living elsewhere.

Dependent variables

To capture objective time pressure, we calculated time spent in market work, unpaid domestic labor (housework, childcare, domestic purchasing), leisure and sleep. To ensure cross-national comparability, we analyzed only primary activity, which meant our estimates are lower than if 'secondary' or simultaneous activity were also captured. For country activity codes and how they were harmonized see Appendix A1.

Subjective time stress was measured in each country through a survey question. In the Australian TUS the question read "how often do you feel rushed or pressed for time?" The response categories were "always" "often", "sometimes", "rarely" and "never". The Korean TUS asked, "in daily life do you feel busy or pressed for time?" Response categories were "yes, always", "yes, sometimes", "not really" and "never". The Finnish TUS asked, "how often do you feel rushed?" Response categories were "all the time", "from time to time" and "hardly ever". We dichotomize responses into a binary outcome variable that contrasts those who "always/all the time" or "often" feel time stressed with those who "sometimes/from time to time", "rarely/not really" or "never/hardly ever" do so. That the Australian TUS had five response categories while Korean and Finish TUS had fewer is an important point of difference and means we can directly compare time stress only within, not between, countries.

Analysis plan and independent variables

For the analyses of time spent in leisure, sleep, paid and unpaid work, we pooled the country samples and ran linear regressions stratified by gender. Gender-stratified models are appropriate for time use analyses because associations with work and family variables systematically differ by gender and pooling male and female data requires multiple interaction terms. The key independent variables are country (Australia (omitted)/Korea/Finland), parenthood, and interactions between them. We captured parenthood by a series of dummy variables: no children (omitted), age of the youngest child is 0-4 years, 5-9 years, or 10-14 years, because associations with time allocation have been found to be most with young children, and least with older children. To examine whether this is the case in Finland and Korea also, we included interaction terms for *age of youngest child* by *country*. The age bands are constrained by the coding of the Australian data, which we note means they are not commensurate with the age groupings of the Organization of Economic Cooperation and Development (OECD) in Table 1.

To investigate subjective time stress, we used logistic regression. Logistic regression analyses show how each independent variable is associated with the likelihood (odds) of a given outcome occurring. In this case, our key independent variables were those capturing parenthood: no children (omitted), age of the youngest child is 0-4 years, 5-9 years, or 10-14 years, and the outcome was the odds of men and women experiencing subjective time stress in each of the countries. We again stratified by gender. The logistic analyses were also run separately by country. We did this because of the definitional differences in the time pressure question noted above. Running separate models for each country meant that interaction terms were not needed in these models. Post-regression Wald tests were used to determine whether associations between parenthood and odds of being time stressed differ significantly by gender within each of the three countries.

Control variables: In all regression models, we entered respondent's age in years. For Korea and Finland age was provided as a continuous variable. In the Australian data, age was provided in 5-year bands and we took the midpoint of each to generate a continuous variable. We included education (has a college degree yes/no) as a dummy indicator of earning capacity. We did not control directly for income because it is not measured consistently across the three countries. However, because earnings, as well as work-time expectations and responsibilities, differ by occupational status, we entered a dummy variable contrasting

non-professional (omitted), with professional status. The models are deliberately parsimonious and exclude variables such as employment which may be confounded with the outcome variables and/or parenthood status.

Results

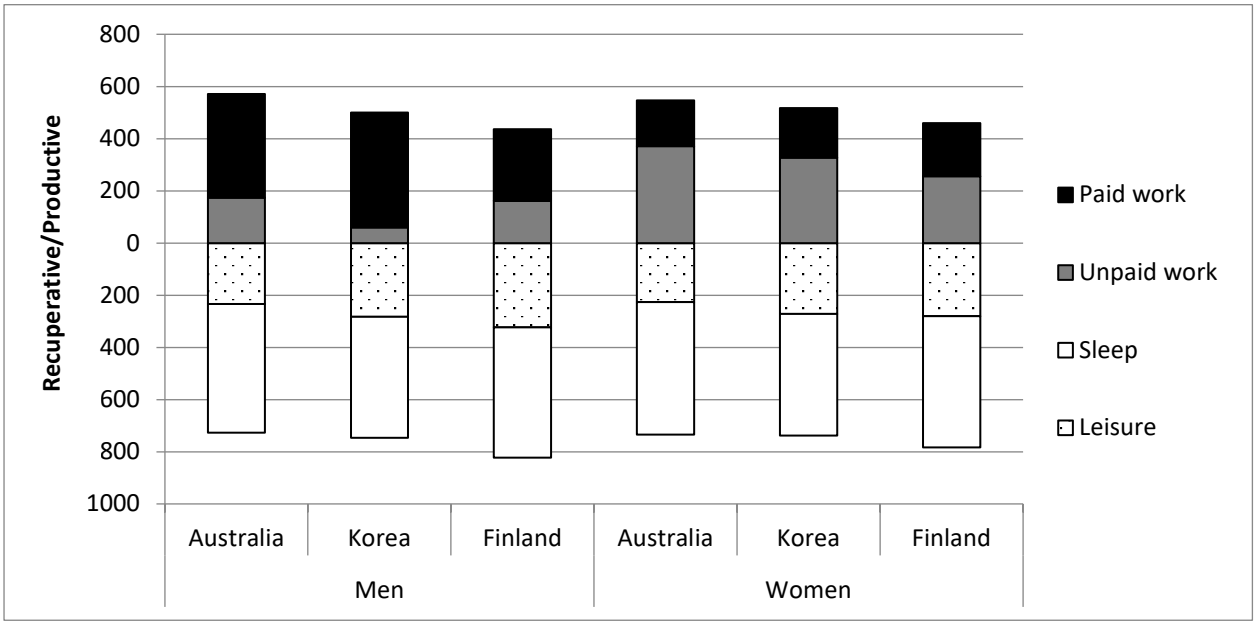
Table 2 describes the sample and delineates country and gender differences in the dependent and independent variables.[1] It suggests that average reported time stress is by far the highest in Australia and the lowest in Finland. However, because of the coding contrasts described above for this variable we place more reliance on within- than between-country differences.

Table 2: Descriptive statistics for Australia, Korea and Finland for household and individual variables

	Australia		Korea		Finland	
Household variables						
Number of households	1292		3210		737	
Age of the youngest child %						
No children	33.5		23.4		44.1	
Aged 0-4	30.9		26.7		23.1	
Aged 5-9	18.7		22.4		16.8	
Aged 10-14	16.9		27.5		16.0	
3+ adults in household (%)	2.5		8.8		0.8	
Person variables	**Men**	**Women**	**Men**	**Women**	**Men**	**Women**
Number of persons	1025	1215	2961	3177	554	668
High subjective time stress	64.3	66.3	38.2	31.4	22.7	22.5
College degree	25.0	27.3	6.1	9.4	31.8	34.7
Professional	75.6	55.0	78.6	42.6	53.0	43.4
Age (mean (SD))	39.0 (8.4)	37.6 (8.7)	40.3 (6.5)	38.4 (7.0)	39.6 (9.3)	38.2 (9.4)
Diary variables (hours per day weighted)						
Number of diaries	2021	2412	5922	6354	1096	1322
Leisure (mean(SD))	3.9(2.8)	3.8(2.5)	4.7(2.9)	4.5(2.7)	5.4(3.1)	4.7(2.6)
Sleep (mean(SD))	8.2(1.7)	8.5(1.6)	7.7(1.6)	7.8(1.5)	8.3(1.9)	8.4(1.7)
Paid work (mean(SD))	6.6(4.7)	2.9(4.1)	7.4(4.1)	3.2(4.1)	4.6(4.7)	3.4(4.3)
Unpaid work (mean(SD))	2.9(2.7)	6.2(3.8)	1.0(1.5)	5.4(3.2)	2.7(2.3)	4.3(3.1)

Table 2 also illustrates variations in time use variables by gender and country. Men report more time in paid work and leisure and less time in unpaid work and sleep than women. Koreans spend the least time sleeping while Finns average the least time working and the most time in leisure activities. Men and women in Australia spend the least time in leisure, and conversely spend relatively large amounts of time in paid and unpaid work (men) and unpaid work (women). Figure 1 summarizes these average patterns, with paid and unpaid work activities that add to time pressure above the zero line and leisure and sleep, recuperative activities likely to mitigate time pressure, below the zero line.

Figure 1: Mean minutes per day spent in leisure, sleep, paid and unpaid work by men and women in Australia, Korea and Finland

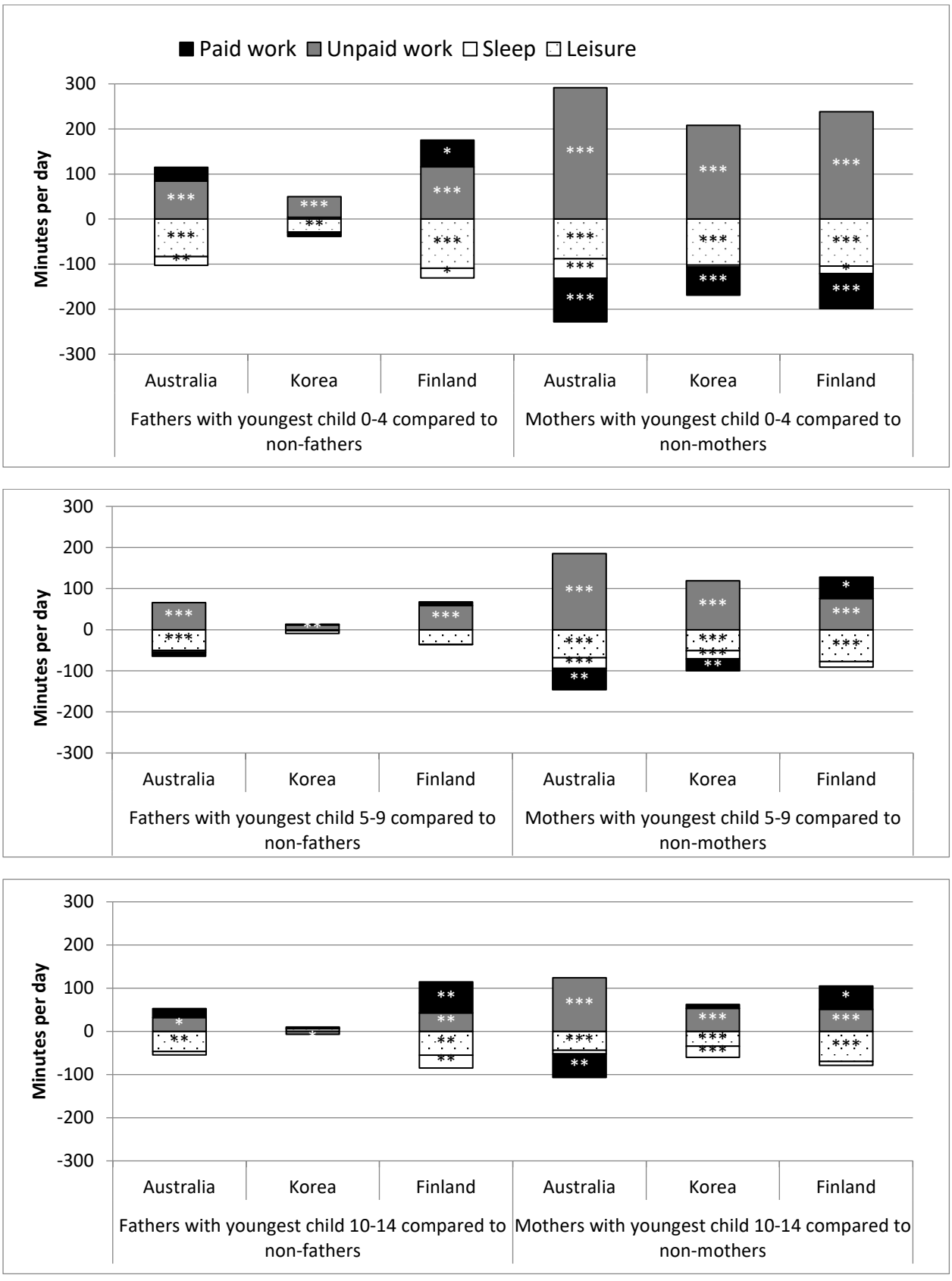


Multivariate regression results

Results for the pooled (by country) and stratified (by gender) linear regressions are presented in Table A2. The reference category is Australia, childless and without degree or professional status. The main effects showed that time in recuperative activities varied by country (Koreans averaged the least sleep and Finns the most leisure) and that time in work activities varied by gender and country. Korean men did least unpaid work of men, and Finnish women did least unpaid work of women. Paid work differed for men (Korean men work the longest hours, Australians next longest, and Finns work the shortest hours), but net of controls there was no significant difference in women's paid work across the three countries.

Our next focus is how parenthood relates to these forms of time use. The models show differences between fathers/mothers with children aged 0-4, 5-9 and 10-14 and those without children within each country. The marginal effects on all four activities by gender are summarized in Figure 2, with the panels each illustrating contrasts by youngest child's age. Values above the zero line means parents do more than those without children and below the zero line means parents do less than those without children. The models also indicate *between* country differences in the impact of parenthood and children's age for each gender, and we note statistically significant results below.

Figure 2: Marginal differences in time spent in leisure, sleep, paid and unpaid work by parents compared to non-parents in Australia, Korea and Finland



*p<0.05, **p <0.01, ***p<0.001 above the zero line indicates parents do more than non-parents, and below the zero line indicates parents do less than non-parents.

We begin with the recuperative activities of leisure and sleep. All fathers and mothers with young children under five years old were estimated to have less leisure than their childless compatriots (see top panel of

Figure 2). Korean men reported the smallest difference (-29mpd) which was significantly ($p>0.01$) less than that found for Australian men (-84mpd). Finnish fathers of 0-4-year-olds reported a difference of -109 minutes per day from Finnish non-fathers. This was significantly different to their Korean, but not to their Australian, counterparts ($p>0.05$). For women there were no significant between-country differences. Thus, the leisure time gaps between nonparents and parents of 0-4-year-old children differed by country for men but not women.

The marginal differences in leisure between non-parents and parents of children aged 5-9 and 10-14 years were smaller (middle and lowest panels, Figure 2), showing the leisure penalty for parents of older children is less than that for parents of 0-4-year-olds. However, most parents still averaged significantly less leisure than childless people in the same country. The single exception is that Korean fathers of 5-9- or 10-14-year-olds were estimated to have similar levels of leisure as their childless counterparts. Thus, when children are older, leisure time penalties are lower for all parents, but are completely absent only for Korean fathers.

We find narrower, but still telling, marginal differences in sleep. With a youngest child aged 0-4 years, Australian and Finnish fathers reported less sleep (-19mpd and -22mpd respectively) than their childless peers. Korean fathers did not. In this they differed significantly ($p<0.05$) from their Australian and Finnish counterparts. Similarly, Australian and Finnish mothers with youngest children aged 0-4 years reported significantly less sleep (-43mpd and -17mpd respectively) than women without children, but Korean mothers of children that age did not. The null results for Koreans may be related to the lower baseline for sleep time in that country (see Figure 1 and main effect for Korea in Table A2). More Korean households contain three or more adults than in the other countries, so it is possible Korean parents get assistance with childcare, including overnight, from domestic helpers or grandparents. The sleep difference with non-mothers reported by Australian mothers with a child aged 0-4 years was significantly more than that reported by Finnish and Korean mothers ($p<0.05$).

The sleep time of parents of older children generally equaled that of same-gender non-parents in the same country, with some exceptions. Korean and Australian mothers with a youngest child aged 5-9 years, and Korean mothers with a youngest child aged 10-14 years, were estimated to have less sleep than their childless counterparts. Given Korean women's low sleep baseline, the findings suggest mothers of school-aged children in that country may be very short of sleep. Finnish fathers with a youngest child aged 10-14 years reported 30mpd less sleep than their childless peers, a significantly wider gap than found for equivalent Korean (-2mpd) ($p<0.01$) but not Australian (-8mpd) fathers.

We next examined how the productive activities of paid and unpaid work varied by parenthood status. In all countries, mothers of 0-4-year-old children were estimated to do significantly less paid work than their childless peers (top panel Figure 2). There was no significant difference in this effect between Australia (-97mpd), Finland (-77mpd) and Korea (-62mpd). Negative associations between presence of children and maternal paid work with youngest children aged 5-9 years were found for Australian (-52mpd) and Korean (-29mpd) mothers. Australian mothers with a youngest child aged 10-14 years were also estimated to spend less time in paid work than Australian non-mothers (-55mpd). In contrast, Finnish mothers with a child aged 5-9 or 10-14 years were estimated to spent 52mpd and 54mpd respectively *longer* in paid work than their childless compatriots. That motherhood is associated with more paid work in Finland whereas the opposite association is evident with both 0-4 and 5-9-year old children (in Korea and Australia) and also 10-14 year old children (in Australia) is an important distinction between the countries.

There was no significant association between parenthood and paid work for either Australian or Korean men, indicating that in both those countries, employment accommodations to parenthood are made by mothers, not fathers. Finnish men reported a different pattern, likely reflecting the progressive cultural context in which employment and care are seen as the responsibility of both genders. Finnish fathers reported significantly higher levels of paid work than their childless peers with children aged 0-4 (59mpd) and 10-14 (72mpd) but not with children aged 5-9 years. This suggests Finnish fathers take on more paid work in their children's early years, while as noted above Finnish mothers limit their employment hours (probably taking up their parental leave entitlements), and then with children in middle childhood mothers'

hours are higher, and fathers' drop slightly. These results could be evidence of both genders calibrating their time availability as children grow. While 5-9-year-old children need less constant care than younger ones, they still require substantial parental attention. With adolescent children, who are likely more independent and have longer school days, Finnish parents of both genders allocate more time to paid work.

In all the countries for both genders there were strong positive associations between unpaid work (housework, childcare) time and having children aged 0-4 years. Mothers reported the highest estimates, with the marginal effects for Australians (291mpd), significantly higher ($p<0.05$) than those for Koreans (208mpd) and Finns (238mpd). Amongst men, differences from their childless counterparts were estimated to be largest for Finnish (116mpd) and Australian (84mpd) fathers of 0-4-year-olds, and significantly smaller for equivalent Korean fathers (46mpd) ($p<0.05$). For fathers, this unpaid work is added to their workload, i.e. traded off against recuperative activities, in contrast to mothers, for whom the tradeoffs are with both recuperative activities and paid work.

Parents of older children were also estimated to spend longer in unpaid work than their childless compatriots, although the marginal differences were attenuated. Mothers were still estimated to experience the largest unpaid work time associations. With 5-9-year-olds, the marginal effects for Australian (185mpd), Korean (119mpd) and Finnish (76mpd) mothers significantly differed from one another ($p<0.05$). With children aged 10-14 Australian mothers of children were estimated to do 124mpd more unpaid work than their childless compatriots, a difference significantly ($p<0.01$) larger than that found for equivalent mothers in Korea (53mpd) and Finland (51mpd). The differences in unpaid work motherhood gaps complement the paid work results noted above. All fathers of a youngest child aged 5-9 reported significantly higher levels of unpaid work than their childless peers, with the marginal difference significantly ($p<0.01$) smaller in Korea (12mpd) than in Australia (66mpd) and Finland (59mpd). Australian and Finnish fathers of children aged 10-14 also reported higher levels of unpaid work than their childless peers (32mpd and 43mpd respectively), whereas Korean fathers did not.

To summarize thus far, across all activities time changes in association with parenthood were larger for women than for men. Gender differences were widest in Korea and least in Finland. Korean men's time use differed relatively little by fatherhood, but in Australia fathers had substantially less leisure time and much higher unpaid work than childless men. Childless Finnish men enjoyed more recuperative time and less productive time than childless men in the other two countries, and fatherhood had the biggest effect on men's time in that country. Childless Australian and Korean women also had similar time profiles, but the associations with motherhood were larger for Australians. Finnish mothers experienced relatively large time impacts with young children, but the effects were markedly lower with older children. With adolescent children, mothers and fathers had similar time profiles in Finland. In the other two countries gender contrasts remained wide. These results are consistent with Finland being the least familialistic of the three countries

We now turn to logistic regression analysis to test associations between subjective time stress, and the presence and age of children within each country, for men and women.

Table 3 shows that in Australia, compared to their counterparts with no children, both fathers and mothers have significantly higher odds of being time pressured if they have children aged 0-4 (fathers 94% and mothers 153%) and if they have children aged 5-9 (fathers 81% and mothers 158%). Australian mothers with children aged 10-14 also have significantly higher odds of being time pressured than childless women (86%), but we did not find an equivalent association for Australian fathers of children aged 10-14.

Table 3: Estimates for logistic regression models predicting subjective time stress for men and women in Australia, Korea and Finland

	Australia					Korea					Finland				
	Men		Women			Men		Women			Men		Women		
	OR (SE)		OR (SE)		Wald test	OR (SE)		OR (SE)		Wald test	OR (SE)		OR (SE)		Wald test
No children															
Aged 0-4	1.94 (0.32)	***	2.53 (0.41)	***		1.30 (0.15)	*	2.16 (0.30)	***	**	2.28 (0.59)	**	1.18 (0.30)		
Aged 5-9	1.81 (0.35)	*	2.58 (0.48)	***		1.07 (0.13)		1.60 (0.20)	***	**	2.03 (0.62)	*	1.19 (0.32)		
Aged 10-14	1.24 (0.25)		1. 86 (0.35)	**		0.95 (0.11)		1.24 (0.14)			1.71 (0.57)		1.17 (0.33)		
Age	1.00 (0.01)		1.00 (0.01)			0.99 (0.01)		1.02 (0.01)	**		0.99 (0.01)		1.00 (0.01)		
College degree	1.59 (0.27)	**	2.20 (0.36)	***		1.21 (0.10)	*	2.00 (0. 19)	***		1.15 (0.26)		1.61 (0.34)	*	
Professional	1.45 (0.24)	*	1.75 (0.24)	***		1.18 (0.11)		3.15 (0.27)	***		1.23 (0.26)		1.69 (0.36)	*	

Notes: * p<0.05, **p<0.01, ***p<0.001.

Wald tests show significant within-country gender differences in subjective time stress

In the other countries, patterns were different both to Australia and to each other. Compared to their compatriots with no children, having children aged 0-4 or 5-9 years was associated with higher odds of Korean mothers being time stressed (121% and 56% respectively). For Korean men, only the presence of children aged 0-4 years was associated with fathers having significantly higher odds of time stress (31%) than their childless counterparts. Conversely, in Finland, *fathers* of children in the two youngest age groups were significantly more likely to report higher odds of being time stressed than non-fathers (228% for age 0-4 and 103% for age 5-9), but there was no equivalent finding for women. Finnish mothers were no more likely to report time stress than Finnish non-mothers. Wald tests were used to compare by gender the odds ratios associated with each age of the youngest child within each country. With youngest children aged 0-4 or 5-9, Korean mothers were significantly more likely to report subjective time pressure than Korean fathers ($p<0.05$). No gender differences were found in the Australian and Finnish data.

Discussion and conclusion

This paper explored relationships between parenthood and time stress in Australia, Korea and Finland, motivated by the assumption that national policies, attitudes and practices could influence mothers and fathers' time tradeoffs and exacerbate or ameliorate their subjective time pressure. The three countries were chosen because they are each an example of a liberal, liberal-familialist or social democratic welfare regime. No country fits a typology type perfectly, however, so we noted their particular social policy and institutional arrangements and social norms, both of which are key to gender-sensitive regime analysis. Importantly, the three countries differed in the degree to which welfare is familialized (provided by families) rather than supplied through public support and services (Crompton 2006, Lewis 1997, O'Connor, Orloff, and Shaver 1999). Korea had the most familialistic social organization and conservative gender attitudes, and Finland the most progressive gender attitudes and non-familialistic institutional arrangements. Australia fell in between. It had relatively progressive gender attitudes alongside relatively sparse policy support for work-family reconciliation, which constrains women's workforce participation.

As expected, we found cross-national contrast in how the recuperative activities of leisure and sleep, and the productive activities of paid and unpaid work, were affected by parenthood, for each gender. In the main, feelings of time pressure broadly echoed objective time constraint, confirming that subjective time stress is not purely perceptual (Giminez-Nadal and Sevilla Sanz 2011, Kleiner 2014). An exception was Finland, where objective and subjective time pressure slightly diverged, and did so differently for men and women. Overall our comparison confirmed that social conditions and social attitudes matter to how the work and time stress of parenthood falls by gender.

For example, time differences by fatherhood were remarkably limited for men in liberal-familialist Korea. While Korean fathers of 0-4-year-olds reported somewhat less leisure and more unpaid work, and also had marginally higher odds of being subjectively time pressured, with older children Korean fathers' time allocation and time pressure was not different from that of their childless counterparts. It is likely pertinent that the marginal differences were from a baseline of relatively little sleep and long paid work hours for Korean men. A demanding work culture can constrain men's ability to contribute to the unpaid work of raising children (Dinh, Strazdins, and Welsh 2017). It may also be both cause and consequence of cultural gender attitudes that assign mothers responsibility for housework and family care (Budig, Misra, and Boeckmann 2012) and/or legitimize fathers claiming more leisure time than mothers (Bianchi and Mattingly 2009).

In comparison, Korean women's time adjustments following parenthood were substantial. They involved multiple trade-offs between unpaid work, paid work, leisure and sleep, the detail of which varied by children's age, but which were present for mothers of all age groups studied. Given the low country baseline of sleep, it is especially notable that Korean mothers were estimated to have even less sleep when their children were older. This may reflect relatively high time demands of children's education, which for many involve evening classes to which mothers may accompany them. Their odds of reporting subjective time pressure were higher than both non-mothers' and fathers', and this was the case when children were aged 5-9 years as well as 0-4 years. The difference in how parenthood affects men and women in Korea is

consistent with traditional gender attitudes, reported in Table 1, regarding who should provide care and who should prioritise paid work (Kwon 2005, Lee 2005, Ochiai 2009). However, some time allocation differences by motherhood are quantitatively smaller in Korea than in Australia and Finland. This may be because, prompted by falling birth rates, the government is instituting measures such as universal childcare to assist women manage work and family, although this is having only mixed success to date (OECD 2013, Peng 2012). In any event, our findings show that the objective time accommodations associated with children in Korea are almost entirely made by women. Thus, in the absence of changes to norms including the long-work-hours culture, the new policy measures may mitigate time gaps between mothers and non-mothers but are unlikely to increase fathers' family time. The findings underscore that institutional arrangements and social norms both influence the gendered outcomes of parenthood across welfare states, and that, though connected, they do not necessarily align (Craig and Mullan 2011).

The Australian context generated particularly high parenthood time penalties, both objective and subjective. Uniquely among the three countries, for women the time trade-offs and feelings of subjective time stress remained present with adolescent children, and mothers' paid work was less than non-mothers' across all three child age groups. This suggests the Australian policy environment and social norms are particularly inimical to new mothers taking a temporary work-break and then participating more fully in the workforce as children grow. It also underlines that gender-sensitive regime analysis requires attention to how the division of domestic responsibilities is affected by the presence of dependants and confirms that despite being usually classified as a liberal welfare state (Arts and Gelissen 2002, 2010, Gornick and Meyers 2003, Orloff 2009), Australia has highly familialistic features. A sustained age effect upon maternal employment implies substantial scarring effects on Australian mothers' lifelong earnings and career progression. At the same time, Australian men's paid work hours were unaffected by fatherhood, but father-nonfather differences in unpaid work time were substantial. Australian fathers also had high odds of feeling time stressed, unsurprisingly given the additional unpaid work burden built on a comparatively high baseline amount of both paid and unpaid work. It is also possible that because long work average hours co-exist with relatively progressive social gender attitudes, fathers in Australia are particularly subject to work-family role conflict and role strain (Craig and Churchill 2018). In any event, overall the results suggest that, compared to both Finland and Korea, Australian parenthood generates higher and more gendered workloads and lower leisure for both men and women, and also high subjective time stress for both genders.

Finland is explicitly non-familialistic in providing public support for women's employment and is more progressive than either Australia or Korea in promoting gender equality and in emphasizing fathers', as well as mothers', involvement in family work (Gershuny and Sullivan 2003, Gornick and Meyers 2003). Of the countries studied, its social policy and institutional arrangements were most supportive of female employment and its social attitudes to work and parenting were most gender-equal. Although care is still quite gendered in Finland, and mothers much more likely than fathers to take leave when children are infants (Lammi-Taskula 2008), the country contrasts in this study show that, compared to men elsewhere, Finnish men experience relatively pronounced consequences, both in objective time allocation and in subjective time stress, of parenthood. This was not the case for Finnish women. Consistent with previous findings that Finnish mothers do more care than fathers (Lammi-Taskula 2008), with young children the marginal differences in their time allocation were quite wide, as in the other countries. However, with older children, differences were much less. Importantly, the recuperative time penalties of motherhood were not present with older children. Also, in a rare instance of objective and subjective time pressure diverging, Finnish mothers did not differ from their childless counterparts in reported time stress.

The lack of a motherhood stress penalty could relate to Finnish women's relatively high baseline leisure and sleep time. Also, Finnish policy allows mothers to take lengthy paid maternity leave, and then access affordable childcare, and return to employment in a short-hours work time regime (Gornick and Meyers 2003) that facilitates gender equality in paid and unpaid work time commitment. Finnish mothers' subjective time stress is possibly mitigated by this predictable and de-familializing institutional framework. Because Finnish fathers also enjoy comparatively high average leisure and low working hours, the finding that, unlike mothers, they do report time stress suggests that for them it is the marginal difference with Finnish non-fathers that is most pertinent. Further, our results by children's age imply dynamic time adjustments by

parents of both genders. Finnish fathers' higher paid work when children are young, lower paid work with primary school children, and again higher work hours with adolescents, and the way these adjustments reflect women's, suggest that they are active partners in adjusting household work-family time allocation as children grow. A possible reason for their significant subjective time pressure is that Finnish fathers share responsibility for managing the work-family nexus.

Becoming a parent alters self-conception (Doucet 2006, Yeung et al. 2001) and our finding that fatherhood has a different relationship with time stress in each of the countries implies that the specific content of the associated adjustments in self-perception may vary with societal norms about the role of fathers and of mothers. Thompson (1991) argued that central to women's perceptions of fairness over housework shares is who they compare themselves with ('comparison referents'). Thus, the patterns in Finnish parents' time stress may arise because fathers feel a greater comparative contrast to childless men than mothers feel to childless women. The cross-national differences are likely underpinned by the social norms of involved fatherhood in Finland leading them to feel more responsibility to be engaged, whereas in Korea fatherhood is less of a subjective contrast with other men, and in Australia both genders feel subjectively very different to their childless counterparts.

We acknowledge that a limitation of our cross-sectional data is that we can identify associations only, but no longitudinal time use data are currently available. Within existing constraints our contribution offers new insight into comparative parental wellbeing and gender equality. It furthers debates on care and time by underlining that social conditions influence the stress of parenthood, and how it falls by gender. An implication is that some stress could be mitigated through policy intervention. Perhaps most basic is working time. Our finding of lower objective time pressure in Finland is facilitated by short average work-weeks. Conversely, our results for Australia and Korea suggest that higher average male paid work hours not only increase gender time gaps, but also gender disparity in the subjective stress of children. They also point toward the relevance of social norms. Where male paid work hours are long, as in Korea, the stress of motherhood is higher; where male paid work hours are long *and* social attitudes more support gender equality, as in Australia, the stress of both fatherhood and motherhood is higher.

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Table A1 Time Use Survey Coding Information for Australia, Korea and Finland

	Australia	Korea	Finland
Year of survey	2006	2009	2009
Time diary			
Number of recorded days per respondent	2	2	2
Sampling of recorded days	consecutive	consecutive	weekday/ weekend
Activity intervals	5 mins	10 mins	10 mins
Activity codes:			
Leisure	800-899	711-799, 919, 7371, 7372, 8722; 8721	431-839; 951, 952, 961, 971, 992, 995,998
Sleep	111,112	111,112	11
Paid work	200-299	211-299, 2601, 2602, 821,822	111-112, 129, 910
Childcare	500-599	511-523, 851, 5121-5292	381-389, 938
Housework, domestic purchasing	400-499 and 600-699	240, 411-499, 841, 3301, 4411-4532, 5301-5509, 6101-6109, 7801, 7802	300-371

Table A2: Estimates for pooled (Australia, Korea and Finland) linear regression models predicting leisure, sleep, paid and unpaid work by gender (minutes per day (mpd))

	Leisure (mpd)			Sleep (mpd)			Paid work (mpd)			Unpaid work(mpd)		
	Men		Women	Men		Women	Men		Women	Men		Women
	Mean(SE)		Mean(SE)	Mean(SE)		Mean(SE)	Mean(SE)		Mean(SE)	Mean(SE)		Mean(SE)
Australia												
Korea	11.11 (11.80)		34.00 (9.30) ***	-34.47 (6.19) ***		-50.28 (5.62) ***	55.68 (18.15) **		16.63 (14.96)	-82.90 (7.23) ***		-9.02 (8.83)
Finland	69.58 (13.41)	***	44.94 (10.88) ***	5.50 (7.56)		-18.23 (6.88) **	-108.45 (20.65) ***		4.93 (18.03)	-16.54 (8.96)		-57.54 (10.38) ***
No children												
Aged 0-4	-83.54 (11.72)	***	-88.34 (9.57) ***	-19.41 (6.72) **		-43.22 (6.12) ***	30.40 (20.32)		-96.89 (16.45) ***	84.34 (10.65) ***		291.26 (11.80) ***
Aged 5-9	-50.43 (13.75)	***	-68.42 (10.61) ***	-4.15 (7.39)		-25.90 (6.87) ***	-9. 98 (24.78)		-51.80 (19.64) **	66.04 (12.79) ***		184.94 (13.27) ***
Aged 10-14	-46.95 (14.44)	**	-44.05 (11.78) ***	-7.54 (8.33)		-8.21 (7.32)	21.06 (25.35)		-54.83 (20.64) **	31.96 (13.03) *		124.03 (13.28) ***
Korea by 0-4	54.35 (14.32)	***	-14.08 (11.76)	23.15 (8.06) **		39.02 (7.35) ***	-39.86 (23.24)		34.73 (18.35)	-38.64 (11.35) **		-83.34 (13.95) ***
Korea by 5-9	47.74 (16.29)	**	17.12 (12.99)	-2.13 (8.66)		5.96 (8.13)	11.31 (27.50)		22.75 (21.90)	-54.26 (13.35) ***		-66.17 (15.24) ***
Korea by 10-14	52.97 (16.53)	**	9.42 (13.86)	9.18 (9.28)		-17.12 (8.43) *	-23.30 (27.47)		64.14 (22.87) **	-38.96 (13.35) **		-70.83 (14.82) ***
Finland by 0-4	-25.55 (19.13)		-15.84 (14.90)	-2.29 (11.16)		26.29 (9.98) **	28.45 (30.78)		19.46 (24.33)	31.76 (16.83)		-52.96 (19.16) **
Finland by 5-9	14.66 (23.32)		-9.31 (17.31)	3.71 (12.84)		12.64 (11.29)	18.52 (36.32)		103.99 (29.58) ***	-7.15 (18.08)		-109.11 (19.36) ***
Finland by 10-14	-8.14 (22.76)		-25.51 (18.51)	-22.16 (13.31)		-1.12 (12.32)	50.76 (35.32)		108.94 (33.20) **	10.83 (18.99)		-72.86 (19.19) ***
Age	0.62 (0.35)		0.40 (0.28)	-0.96 (0.19) ***		-1.84 (0.18) ***	-0.25 (0.51)		-0.31 (0.41)	0.53 (0.23) *		1.27 (0.28) ***
College degree	-9.07 (5.02)		-21.37 (4.55) ***	-12.94 (2.62) ***		-18.56 (2.60) ***	22.06 (7.31) **		74.86 (7.03) ***	-0.20 (3.22)		-35.26 (5.38) ***
Professional	-55.82 (6.15)	*	-89.01 (3.94) ***	-7.98 (2.89) **		-11.35 (2.34) ***	112.30 (9.00) ***		226.78 (5.91) ***	-31.58 (4.22) ***		-116.86 (4.39) ***
Constant	301.58		313.84	547.28		607.38	302.84		70.97	130.86		247.52
n	**9039**		**10088**	**9039**		**10088**	**9039**		**10088**	**9039**		**10088**

* p<0.05, **p<0.01, ***p<0.001.