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The Multitasking Parent: Time Penalties, Dimensions and Gender Differences

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Abstract:

Caring for children takes a great deal of time, much of which consists of multitasking, yet the dimensions and possible consequences of parental multitasking have been little explored. Using data from the Australian Bureau of Statistics (ABS) Time Use Survey (TUS) we compare, by gender, parents and nonparents on multiple measures of multitasking: the amount of daily time that is multitasked, the activities that are most frequently multitasked, the proportion of the waking day that is spent multitasking, and the number of daily episodes of multitasking. Then we focus specifically upon parents. We examine the amount and proportion of daily productive activity (child care, domestic work and paid work) that is multitasked with another productive activity and the amount and proportion of daily productive activity that is multitasked with non-work activity (leisure, recreation, socializing), exploring differences by gender, education and socio-economic status. Finally, we examine relationships between the amount and composition of multitasking and gender differences in parents' reported time pressure.

The Multitasking Parent: Time Penalties, Dimensions and Gender Differences

The transition from having no children to starting a family brings substantial changes in time use (Craig & Bittman, 2008; Kotila, Schoppe-Sullivan, & Kamp Dush, 2013). The increase in household workload is large and, although it varies somewhat across different social and policy contexts, it is present cross-nationally (Craig & Mullan, 2010; Dribe & Stanfors, 2009; Gauthier & DeGusti, 2012). Parenthood also changes the composition of time use, adding requirements to perform not only child care but additional domestic work as well (Craig & Bittman, 2008). Households meet this additional unpaid time demand in a variety of ways, including redirecting time to child care that non-parents can allocate to other things, such as leisure, sleep and market work (Bianchi, 2005). Other forms of adaptation include time compression, by which is meant doing more within the same period of time (Robinson & Godbey, 1997).

Accordingly, scholars have noted that a great deal of the extra burden of time that children bring is reflected in multitasking: looking after children while doing something else at the same time (Craig, 2006a; Zick & Bryant, 1996). Comparisons of parental time show that mothers multitask more than fathers, adding to gender gaps in total workload (Sayer, England, Bittman, & Bianchi, 2009). Indeed, it has been argued that the so-called “second shift” whereby mothers do more total work than fathers (Hochschild & Machung, 1989; Milkie, Raley, & Bianchi, 2009; Sayer et al., 2009) is actually mainly comprised of multitasking (Craig, 2007b). Research has found that while women do more in the home and men do more in the marketplace, overall workloads - the total amount of time that men and women spend in paid and unpaid work summed together - is broadly similar if only main or “primary” activities are counted (Bianchi & Milkie, 2010; Burda, Hamermesh, & Weil, 2007; Gershuny & Sullivan, 2003; Robinson & Godbey, 1997). The exception is households with young children in which both parents are employed (Milkie et al., 2009). In these households, especially if both primary and secondary activities (those done at the same time) are included, mothers’ total paid and unpaid workloads outstrip fathers’ (Craig, 2007b). Counting both primary and secondary activity gives a fuller account of time constraint and some indication of the total output of work performed (Ironmonger, 1996).

However, there is debate over how best to capture multitasking, and what its actual association is with men and women’s workload, time quality, and well-being. Some argue, for example, that it is not meaningful to study the overall *amount* of multitasking, because the *proportion* of time multitasked is a more telling measure (Sullivan & Gershuny, 2013). The argument is that multitasking is a by-product of the gendered division of labor. Men’s higher paid work time means they spend more time in a formal workplace setting in which multitasking is less common. Unpaid work (domestic work and child care) usually done in informal settings, such as the family home, is more readily multitasked. Because women spend more time than men at home with children, they have more *opportunity* to multitask (Sayer, 2007; Sullivan & Gershuny, 2013). But while it may be useful for some research questions to know whether a similar proportion of men’s and women’s time consists of double activity, this yields an incomplete picture. Even if, as Sullivan and Gershuny (2013) suggest, parents of both sexes multitask about a third of the time they spend in domestic work and childcare (which together constitute unpaid work), it still may be important to know whether that multitasking constitutes a third of an hour or a third of six hours. Longer periods of multitasking may result in more being accomplished overall, and it could also be associated with more harriedness, more subjective time pressure, and greater feelings of stress and overwork.

Time poverty or time stress is defined as having a high amount of time committed to activities, particularly paid and unpaid work, and not enough time to meet all duties and responsibilities (Kleiner, 2014). While some research operationalizes it in terms of the objective amount of time spent (see, for example, Kalenkoski, Hamrick, & Andrews, 2011; and Sullivan & Gershuny, 2013), others emphasise that time pressure is 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 & Lee, 2007; Kleiner, 2014; and Mattingly & Sayer, 2006). Using such measures has shown that parents' subjective time pressure is greater than non-parents'; parents of both genders report high subjective time pressure but mothers' reported time pressure is higher than fathers', particularly when children are young (Craig & Mullan, 2009; Craig & Sawrikar, 2009).

This is likely to result, at least partly, from their multitasking. Offer and Schneider (2010) describe multitasking as an indicator of time pressure, since it allows people to squeeze more tasks and activities into a limited amount of time. Accordingly, it has been argued that parents' experience of leisure is very different by gender because women so often multitask leisure with child care, causing their leisure to be less relaxing and more frequently interrupted (Bittman & Wajcman, 2000; Mattingly & Bianchi, 2003). Mothers combine leisure with child care to a greater extent than fathers across different national environments and contrasting policy frameworks, suggesting that the gender difference is robust to outside institutional influences (Craig & Mullan, 2013). One conjecture is that pairing leisure with child care leads to greater subjective time pressure (Bittman & Wajcman, 2000) but seen the opposite way, combining child care with leisure, may actually make the child care component of the double activity more pleasant. In addition to this potential benefit, as it offers the possibility to "get things done" with less time, multitasking may actually be beneficial in reducing time pressure. Some point out that multitasking a productive work activity (i.e. paid work, domestic work, or child care) with leisure, such as folding laundry while watching TV, is not likely to create time stress (Sayer, 2007). It may be more relaxing than doing that work activity and nothing else at the same time. In comparison, doing two forms of productive work simultaneously, such as domestic work and child care, seems particularly stressful. Offer and Schneider (2011) found not only that mothers do more multitasking than fathers, but that mothers' multitasking was more likely than fathers' to involve domestic work and child care. They further found that mothers' multitasking involves more negative emotions and work-family conflict than does fathers'. This suggests that gender differences in what activities parents are multitasking is potentially a marker of differential well-being. Here we investigate multitasking's relationship to subjective time pressure (feeling rushed or pressed for time) directly for the first time.

Also of potential relevance is the number of daily episodes of multitasking. Scholars argue that time fragmentation - frequent interruption and change between one activity and another - is fatiguing and stressful (Strazdins et al., 2011). The psychological literature conceptualises task switching as shifting between cognitive tasks, and notes that it has "costs" including slower response times and increased likelihood of error (Monsell, 2003; Waszaka, Hommela, & Allport, 2003). It could thus diminish, rather than increase, productivity. Also, frequent swapping between tasks or from single to multiple activities may be associated more strongly with subjective time pressure than long periods of simultaneous activity, especially if one of the sustained simultaneous activities is leisure. However, while previous studies drawing on time use data have counted activity episodes on the assumption that fragmentation is stressful (Bittman & Wajcman, 2000; Mattingly & Bianchi, 2003), direct

examination of the relationship between episode frequency, multitasking and time pressure is currently lacking.

Overall the literature suggests that multitasking is a pressing issue for parents, particularly mothers, but empirical investigation of its magnitude, composition, and consequences for parental well-being is sparse. To address this gap we first compare on multiple measures of multitasking between parents and nonparents: the amount of daily time that is multitasked, the activities that are most frequently multitasked, the proportion of the waking day that is spent multitasking, and the number of daily episodes of multitasking. Then we focus on parents. We examine the amount and proportion of daily productive activity (child care, domestic work, and paid work) that is multitasked with another productive activity, and the amount and proportion of daily productive activity that is multitasked with non-work (leisure, recreation, socializing) activity, exploring differences by gender, education, and socio-economic status. Finally, we examine relationships between the amount and composition of multitasking and gender differences in parents' reported time pressure.

METHOD

Data

We use the nationally representative Australian Bureau of Statistics (ABS) Time Use Survey (TUS) 2006. The TUS gathers information on the time allocation of all in sampled household aged 15 and over ($N = 7,672$). Respondents keep a time diary recording what they do in five minute intervals over one or ideally two days. We draw a sample of single and couple parents and non-parents aged 25 to 54 years ($n = 3622$, diaries = 7145). The sample is limited to prime aged adults to exclude retirees and students. For the purpose of the analysis the sample is further subdivided into parents (mothers $n = 989$, diaries = 1961; fathers $n = 795$, diaries = 1559,) and non-parents (women $n = 938$, diaries = 1852; men $n = 900$, diaries = 1773). Included parents are those who reside with their (biological or step) children. Non-parents may have children living elsewhere, but the TUS does not provide this information.

In addition to detailed time use, the TUS also gives information on who is present during activity and demographic and background information about respondents. Of particular relevance to this study, the diary requires respondents to record an activity done as either a "primary" or "secondary" activity. These indicators of time spent in primary or secondary activity are the base information we use to construct our multitasking variables. The primary activity is the "main" activity while the secondary activity is one that is completed at the same time. Key sample characteristics are shown in Table 1.

Dependent Variables

To construct multitasking variables we proceed as follows. First, following international time use coding conventions adhered to by the ABS we classify activities into nine broad categories: personal care (ABS TUS codes 140-199); employment (ABS TUS codes 200-399); education (ABS TUS codes 300-399); domestic work (ABS TUS codes 400-499) child care (ABS TUS codes 500-599); purchasing goods and services ((ABS TUS codes 600-799); voluntary work and care activities (ABS TUS codes 700-799); social and community interaction (ABS TUS codes 800-899), and recreation and leisure (ABS TUS codes 900-999). Primary time spent in these activities sums to 24 hours, less time spent sleeping. The mean

time spent in each of these activities as a primary and as a secondary activity is shown in Table 1.

For selected analyses we combine these categories into total work (productive) activities (the sum of paid work, domestic work including grocery shopping, and child care (ABS codes 200-399, 400-499, 500-599)) and total non-work activities (ABS codes 140-199, 300-399, 600-699, 700-799, 800-999). (Note that domestic work including grocery shopping, plus child care, together constitute unpaid work.) We use the terms “productive activity” and “work activity” interchangeablyⁱ. We further classify productive activities by whether or not they are multitasked, and with what they are multitasked. Specifically, we calculate the time each productive activity is done as a primary activity only (that is, not multitasked with any other activity), with another productive activity (paid work, domestic work, or child care) or with a non-work activity. For each of these categories we calculate both the total *amount* of daily waking time spent and the *proportion* of daily waking time spent. In constructing our multitasking variables we calculate hours per day of an activity (recorded as either a primary or secondary activity) that are reported to be done with another activity (recorded as either a primary or secondary activity); each time period is counted once only and time spent sleeping is excludedⁱⁱ. Performing different care activities for multiple recipients at the same time would be captured as multitasking, but performing one care activity for multiple recipients simultaneously would not. For example, reading to several children at the same time would be counted as one activity, not as multitasking. We also count the number of daily episodes of multitasking, to find out how often respondents switch between multitasked activities.

Subjective time pressure is rated in the TUS on a 5-point Likert scale, in answer to the question “How often do you feel rushed or pressed for time?” Following Hamermesh and Lee (2007), we create a binary outcome variable that contrasts those who “always” or “often” feel rushed or pressed for time with those who “sometimes”, “seldom” or “never” do so.

Analysis Plan

We begin with a descriptive overview of the multitasking of parents and non-parents, by gender. We separate productive (paid and unpaid) work into its relative composition by whether or not it is multitasked. We distinguish between multitasking that involves another work activity and multitasking that pairs a work activity with a non-work activity. We calculate what proportion of the waking day is composed of each of these three categories of multitasking. We calculate the number of daily episodes in each measure. We then focus on parents, running a series of linear regression analyses of parents’ *hours per day* spent on productive activity with no multitasking (Model 1), *hours per day* spent on productive activity that is multitasked with other activities (work or non-work) (Model 2), and the *proportion* of daily productive activity that is multitasked with other productive activity (Model 3).

The use of linear regression has been debated in time-use research because of the sometimes-large number of zeroes in the dependent variables arising when individuals record no time in an activity. Some argue that Tobit models are more appropriate for time use data, assuming a latent propensity to do an activity, and that negative values of this propensity are censored at zero (see for example Sousa-Poza, Schmid, & Widmer, 2001). Others counter that time spent in an activity is not censored and cannot take values less than zero and that with one- or two-day diary windows, reported zeroes reflect a sampling problem rather than actual nonparticipation (the activity could be performed on days not observed) (see, for example, Brown & Dunn, 2011; Stewart, 2009; and Wight, Price, Bianchi, & Hunt, 2009).

For these reasons, linear models are preferable to Tobit. Foster and Kalenkoski (2013) compared results from Tobit and OLS estimates and found the signs on the marginal effects were generally similar regardless of model type and of whether the data were drawn from one- or two-day time-diaries. For modelling proportions (ratios), the fractional logit (FL) model is a potential option because the dependent variable is constrained to take values between 0 and 1 (Buis, 2006; Papke & Wooldridge, 1996). However, OLS has been found to yield substantively similar results and is preferred here because the results are easier to interpret (Craig & Mullan, 2011).

The aim of Models 1-3 is to identify parental characteristics associated with multitasking. Our central variable of interest is parents' gender. Individual and household characteristics, including human capital indicators, may relate also to the amount and composition of parental multitasking. Educated parents have been found to spend more time in active child care, particularly in activities such as talking, reading, and teaching that are likely to develop their children's human capital (Craig, 2006b; Kalenkoski & Foster, 2008; Sayer, Gauthier, & Furstenberg, 2004). Middle class parents, in particular, practice intensive parenting and 'concerted cultivation' of their children (Hays, 1998; Lareau, 2003). It may be that to maintain this heightened attention to children, parents who are more highly educated or have higher socio-economic status multitask child care to a greater extent than other parents. We therefore enter education (has a tertiary degree, no = 0, yes = 1). We enter a measure of SES: the Socio-Economic Index For Area (SEIFA) (Australian Bureau of Statistics, 2006). We code this as lowest 60 percent (omitted) and highest 40 percent = 1). We also enter income. In the original ABS data set income is supplied as deciles for equivalised household income. We recode these into low (deciles 1-4), middle (deciles 5-7) and high (deciles 8-10).

We control for age of the youngest child (0-4 years old = 0, 5-15 years old = 1), because parental child care loads are highest when children are young (Craig & Bittman, 2008). Having a domestic partner has been found to be associated positively with the amount of domestic work performed by women (Baxter, Hewitt, & Haynes, 2008), so we control for partnership status (married or cohabiting = 0, single = 1). We also enter age (in years), because patterns in employment and unpaid work vary over the life course (Baxter, 2002). Because the associations between the independent variables, time in productive activity and the multitasking variables are likely to differ systematically for mothers and fathers, we interact each with gender and present fully-interacted models. The reference category is a partnered father with a youngest child aged 0-4, in the lowest 60 percent of SEIFA, in deciles 1-4 of household income, with no college degree.

We then run logistic regression analyses to see whether the amount and/or composition of multitasking is associated with "always" or "often" feeling rushed or pressed for time. We are interested in whether gender difference in subjective time pressure can be attributed to the amount or composition of multitasking, so again present fully interacted models. The logistic regression models have the same demographic variables as described above. In Model 4 we enter the *hours per day* that productive work (paid and unpaid) is multitasked with either a productive work activity or a non-work activity. In Model 5 we add the *proportion* of productive work that is multitasked with another productive activity and the *proportion* of productive work that is multitasked with a non-work activity. That is, we add all three multitasking variables together, to see if the effects of any outweigh the others, and whether any or all explain gender differences in reported time pressure.

All descriptive statistics and models are weighted to account for non-response bias and unequal distribution of days of the week. Standard errors are estimated using Taylor linearization to account for the clustered survey design. In the survey, clustering occurs in two ways. First, because most respondents complete two diaries on separate days, diaries are defined as clustered within each person. Second, because most respondents came from households where both partners completed diaries, respondents are defined as being clustered within householdsⁱⁱⁱ.

RESULTS

Table 1 shows sample characteristics. We include workforce status, because although we do not include it in our models due to endogeneity concerns, it is an important contextual variable, as there are wide gender differences in workforce participation, particularly for parents: 87 percent of fathers and 22 percent of mothers work full time, compared to 75 percent of childless men and 54 percent of childless women. Table 1 also shows that childless women are, on average, older and more highly educated than mothers. Fathers and childless men are similar in age and education.

The lower panel of Table 1 shows mean time spent as a primary and as a secondary activity in each of the nine major TUS activity categories. It shows that leisure is the activity that is most often done as a secondary activity, and that this is the case across all four respondent groups. Parents average around 3½ hours per day, childless women over 4 hours per day and childless men 3.8 hours per day in recreation and leisure as a secondary activity. Thus, both parents and non-parents average around 3-4 hours per day doing leisure activities in addition to something else. For non-parents, the multitasking of all other activities is very minor in comparison to leisure. For parents, however, child care as a secondary activity is also substantial, particularly for mothers. Excluding time in sleep, mothers spend 3.1 hours per day doing child care at the same time as something else. Fathers spend around 1¼ hours per day in this way.

[Table 1]

Multitasking

Details about the breakdown of multitasking into work and non-work activities, and how multitasking varies in terms of amount, proportion of the waking day and number of daily episodes across the four respondent groups are set out in Table 2.

Across all possible activity combinations excluding sleep, the mean for the whole sample suggests that, on average, activities are multitasked 12 times a day. This multitasking amounts to an average of 6 hours per day. However, multitasking is not evenly distributed between parents and non-parents or between genders, and there are differences in the combinations of activities multitasked. Child care (and to a lesser extent domestic work) is more commonly multitasked with non-work activity than is paid work. Mothers spend the most time of all four groups in multitasking activities. They average around 7.4 hours per day multitasking compared to 5.2 hours per day for fathers, 4.8 hours per day for childless women and 4.3 hours per day for childless men (all differences with mothers significant at $p < 0.001$). Note that taking account of multitasking indicates that, although parents average much higher total workloads than non-parents, within each group women average only

slightly higher total workloads than men (and only the gap (16 minutes a day) for parents is statistically significant (at $p < 0.05$)).

In relative terms, childless men and women have similar multitasking profiles to each other: around 70 percent of their waking time is spent doing only one activity at a time. They spend a very small proportion of their waking day multitasking two productive activities (0.4 percent for men and 1 percent for women, and around 12 percent (11 percent for men and 13 percent for women), of their day multitasking productive activities with non-work activities. The gender differences in both these measures are significant at $p < 0.001$. The remainder of childless men and women's multitasking is comprised of doing two non-work activities simultaneously (around 16 percent of their waking day). Fathers' overall profile closely resembles that of non-parents, with 67 percent of their day spent performing one activity only. However, compared to non-parents, fathers spend more time multitasking two productive activities (4 percent of their waking hours) and less time multitasking two non-work activities (11 percent of their waking hours). Both differences to childless men are statistically significant at $p < 0.001$. Contrasts with non-parents are more pronounced for mothers than for fathers. Mothers average 53 percent of their waking hours in primary activities only (i.e. not multitasking). This is a much lower proportion than any of the other groups (all comparisons with mothers are statistically significant at $p < 0.01$). They have the highest proportions of waking time multitasking two productive activities (14 percent) and combining work and non-work activities (22 percent) (all comparisons with mothers statistically significant at $p < 0.01$). As is the case for fathers, around 11 percent of a mother's day is spent multitasking two non-work activities.

Across activity combinations, and also in time not multitasked, women report a greater number of episodes than men in the same circumstances. Overall mothers report the most discrete episodes, averaging around 20 multitasked episodes compared to about 10 for fathers and childless women and 7 for childless men (all differences between mothers and the other three groups are statistically significant at $p < 0.01$). This suggests that compared to the other three groups, mothers' time is more fragmented and divided among more tasks across the day. This does not apply just to multitasked episodes. Mothers also have the most primary activity episodes, so taken together these results suggest that mothers are more likely than others to do activities in shorter time bursts. Some of this difference may arise because women are more conscientious or thorough in their reporting than men, but this would not explain differences between mothers and childless women. It is possible also that childcare, in particular, is typically done in frequent short episodes. This would mean that being more home-based not only fosters more multitasking, as discussed above (Sayer, 2007; Sullivan & Gershuny, 2013), but also results in more time fragmentation.

[Table 2]

In summary, the descriptive results show that, compared to mothers, non-parents and fathers spend a greater proportion of their day doing primary activities only. Women, with and without children, report more activity episodes than men, but the gap is widest between mothers and fathers. This is true of their time spent in primary activities only as well as time spent in multitasking. Hence their greater subjective time pressure reported in prior research (Craig & Mullan, 2009; Mattingly & Sayer, 2006) could be a result of the choppiness of their day, as well as the doubling up of activities. The descriptive results also make clear that the amount of multitasking is higher for parents than for non-parents, and that child care is the work activity most commonly multitasked. All other work activity combinations - paid work or domestic work teamed with other paid or domestic work - account for much less

multitasking than childcare. We now investigate more closely the dimensions of multitasking child care, and how they differ by gender, focusing on parents only.

Multitasking Child Care

The left hand panel of Figure 1 shows the mean amount of child care performed by fathers and mothers when both primary and secondary activities are included (i.e. time periods are counted only once). The different colors indicate whether child care is performed as a primary activity only (i.e. not multitasked) (black), combined with productive work activities (dark grey), or combined with non-work activities (light grey). Overall mothers spend considerably more time doing child care activities than fathers (5.5 versus 2.3 hours per day, $p < 0.001$), confirming a very large body of prior research (see Bianchi & Milkie, 2010 for an overview). The right hand panel of Figure 1 shows the proportional distribution of this time, divided by whether it is not multitasked (black), it is multitasked with work activities (dark grey) or multitasked with non-work (light grey) activities.

[Figure 1]

Mothers and fathers spend a similar proportion of their child care time doing this child care as a solo activity. Thus, the proportion of time parents spend in multitasking with child care is also broadly similar. For both genders, approximately 25 percent of parental child care is done as a primary activity only and 75 percent is combined with other activities. This supports previous research claiming that fathers and mothers do a similar proportion of their unpaid work (domestic work and childcare) as double activity (Sullivan & Gershuny, 2013). However, when the child care is multitasked with another activity, a gender difference emerges. Half of fathers' total child care time is multitasked with non-work activities. Further analysis reveals that the biggest portion of this time is leisure, with much smaller amounts of time in personal care and social and community interaction, and negligible amounts in voluntary work, adult care, and education. Only about a quarter of fathers' child care time is multitasked with another work activity (paid work, domestic work/grocery shopping, or doubling up on child care)^{iv}. In contrast, over 35 percent of mothers' child care is paired with other work activities, and 40 percent is combined with non-work activities. If, as previous work suggests, multitasking with non-work activities is not stressful (Sayer, 2007), this could mean that fathers' child care time consists of more leisure-like consumption than does mothers'.

What Predicts Parental Multitasking?

Table 3 shows the results of linear regression analyses predicting parents' *daily hours* in total productive activity with no multitasking, *daily hours in* total productive activity multitasked with other (work or non-work) activity, and the *proportion* of productive activity that is multitasked with another productive activity.

Net of the control variables, mothers average over 3½ hours less per day than fathers doing productive activity without multitasking (Model 1). Conversely, compared to fathers, mothers average nearly 6½ hours more a day doing two productive activities at the same time (Model 2). In terms of proportions, 25 percentage points more of mothers' productive activity than of fathers' productive activity involves pairing two work activities, rather than pairing a work with a non-work activity (Model 3).

In Model 1, the age of the youngest child is not associated significantly with time in a single activity as a main effect, but the interaction with gender shows that mothers of older children spend about 50 more minutes a day without any multitasking than mothers of younger children. Conversely, they are predicted to spend less time multitasking, with both the main effect for age of youngest child and the gender interaction term significant in Model 2. Substantively, the results indicate that parents of children aged 5-15 multitask for an hour and a half (fathers) and nearly three hours (mothers) less a day than parents of younger children. Model 3 shows that the proportion of total work time composed of multitasking two productive activities is similarly lower when children are older. The size of the association is four percentage points for fathers and nearly 13 percentage points for mothers.

[Table 3]

As a main effect, being in the top 40% of Socio Economic Index For Area (SEIFA) is associated with spending nearly an hour a day more in one activity only (Model 1), but the gender interaction term is negative, suggesting the finding that higher socio-economic status is associated with more single activity applies particularly to fathers. This is underlined in Model 2, in which the main effect of SEIFA on time spent multitasking is not significant, but the gender interaction is. It suggests that mothers in the top 40% of SEIFA spend nearly three quarters of an hour a day more in double activity than mothers in the lowest 60% of SEIFA. The findings likely reflect gender differences in employment hours, as well as the fact that high-SEIFA fathers may be those in professional occupations with long working hours and high-SEIFA mothers more likely than other women to be full-time homemakers.

Compared with having a low household income, having a middle level household income is associated with an hour and twenty minutes more a day with no multitasking. There is a negative interaction with gender indicating that the size of the association is nearly $\frac{3}{4}$ of an hour less for women than for men. High household income also predicts more time with no multitasking than having a low income. In this case the effect (just over an hour a day) is not statistically different for mothers and fathers. We see no other associations with household income for either gender.

We do see gender differences in associations between multitasking and not having a partner: a positive main effect of 1.17 hours a day is more than negated by the gender interaction. This implies that men multitask more when they are single than partnered, but the same is not true for women. We would expect this because prior research has found women's unpaid workloads are higher if they have a partner (Baxter et al., 2008; Craig, 2007a), but the number of single fathers is very small, so this result should be regarded with caution. Age is significant only for women, with the results substantively negligible.

What Relationship Does Multitasking Have With Subjective Time Pressure For Fathers And Mothers?

We now turn to the question of whether multitasking is associated with subjective time pressure, and how this relationship differs by gender. Results are shown in Table 4. Note that odds ratios (not marginal effects) are reported. An odds ratio of less than 1 indicates a negative association and an odds ratio of more than 1 indicates a positive association.

Model 4 finds no significant main effect for gender but shows that, with increasing hours a day spent multitasking, mothers have higher odds than fathers of reporting that they are "always" or "often" rushed or pressed for time. Model 5 adds the proportion of total

work that is multitasked with work activities and the proportion of total work that is multitasked with non-work activities, both interacted with gender. In this model, more hours per day spent multitasking predicts higher odds of feeling rushed. The gender interaction is not significant. This suggests that the estimated relationship between mothers' daily hours spent multitasking and their reported time pressure found in Model 4 is moderated by the type of multitasking. The proportion of total work time spent multitasking two work activities is not significantly associated with feeling rushed, either as a main effect or interacted with gender. This implies that if mothers and fathers' multitasking time is of a similar magnitude and their total work time includes a similar proportion of multitasking two productive activities, their subjective time pressure will be similar.

A higher proportion of time spent multitasking a work activity with a non-work activity is associated with lower odds of parents of both genders reporting that they are "always" or "often" rushed or pressed for time. The finding suggests that it is less stressful to multitask a productive activity such as child care with leisure or a recreation activity than to do it as a primary activity only or to combine it with another work activity. The implication is that there is an important distinction between multitasking work with other work activities as opposed to multitasking work with non-work activities: a higher proportion of the latter combination ameliorates feelings of time pressure. Taken together, the results in Models 4 and 5 suggest that if mothers can combine work such as child care or domestic work with leisure to the same extent as fathers, they can have similar levels of subjective time pressure.

[Table 4]

A number of the other independent variables also have significant associations with subjective time pressure. The odds of reporting being "always" or "often" rushed or pressed for time are higher in households with a high income than in households with a lower income, with no difference predicted between men and women. Having a college degree is associated with higher odds of feeling rushed, with the effects not different by gender. Higher SEIFA is associated also with higher time pressure as a main effect. The odds of being rushed are lower for high-SEIFA women in Model 4 but, although the magnitude and direction are similar in Model 5, the association is not significant, weakly suggesting that the negative association of high socio-economic status with women's feelings of being rushed is moderated by the type of multitasking they do. No other significant associations are found. In additional analyses (not shown) we find that the number of daily multitasking episodes is not associated with subjective time pressure for either mothers or fathers, contrary to the hypothesis that fragmentation could be directly associated with subjective time stress.

CONCLUSION

In this chapter we conduct a detailed time-diary investigation into multitasking, using population-representative survey data on Australian households. Descriptive analyses show that, for nonparents, multitasking largely involves leisure and recreation activities, whereas for parents, it also is comprised substantially of child care, and to a lesser extent, domestic work. This is particularly the case for mothers. In addition to mothers doing more multitasking of unpaid work than fathers, less of their multitasking involves combining a productive activity with a non-work activity such as leisure or socializing. On average, the biggest proportion of fathers' multitasked child care is spent doing a simultaneous leisure activity, whereas mothers' multitasked child care is combined in more equal parts with work and non-work activities.

Multivariate analyses show that the gender differences in overall amount and in composition of parental multitasking persist when other factors including education, household income and socio-economic status are held constant. The gender gaps in multitasking likely are substantially due to differences in work force participation. In our sample, a much higher proportion of mothers than fathers are not employed or work part time hours (see Table 1), and it has been argued that mothers' multitasking is facilitated by being more home-based, because child care and other unpaid labor are more readily combined with other activities than is paid work (Sayer, 2007; Sullivan & Gershuny, 2013). Due to concerns regarding endogeneity, employment status variables are excluded from the regressions, so our analyses cannot show whether constraining paid work hours to be equal for mothers and fathers would result in more similar levels of multitasking and more similar proportions of total work consisting of two simultaneous productive activities.

Our findings suggest that multitasking is implicated in the gender differences in parental feelings of being rushed that previous research has found (see for example Craig & Mullan, 2009; Mattingly & Sayer, 2006). Total amount of multitasking is associated with higher reported time stress, and a higher proportion of work/non-work multitasking is associated with lower reported time stress. These findings suggest that studies comparing only the proportion of unpaid work time that fathers and mothers spend in multitasking without attending to its type miss an essential difference (Sullivan & Gershuny, 2013), and support the conclusion of Offer and Schneider (2011) that productive activity multitasking constitutes a gender difference in well being. Our results imply that pairing child care with other work activities makes it more stressful, whereas combining it with leisure conversely may make it more pleasant and relaxing.

The conception of children as consumption items and the idea that child care may itself be a form of leisure consumption are well-grounded in economic thought (see for example Becker, 1991; Juster & Stafford, 1991), although the view that it is a productive work activity, strongly made by feminist economists, is now widely held (see for example Folbre, 1994; Hartmann, 2004; Nelson, 2006). The findings here could mean that when child care can be combined with leisure, it becomes more leisure like. If so, this would imply that fathers' child care could be viewed as leisure consumption to a greater extent than mothers'. However, to pursue this possibility would require more detailed investigation, ideally conducted with longitudinal data. Because our current data are cross-sectional, they can identify associations only, not causal effects. Future research also could examine whether there are connections between partners' subjective time pressure, whether these arise from workplace or home-based activities, and the extent to which they relate to the amount and composition of multitasking.

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TABLE 1: Sample Characteristics

	Parents				Non-parents			
	Mothers		Fathers		Women		Men	
Person variables	%		%		%		%	
Employment status								
Full time	21.8		86.6		53.8		75.3	
Part time	41.4		5.5		27.3		15.4	
Not in the labor force	36.8		7.8		18.9		9.3	
Age of youngest child								
0-5	46.1		50.6		0.0		0.0	
5-14	53.9		49.4		0.0		0.0	
Has a college degree	26.2		24.5		30.4		25.2	
SEIFA								
Bottom 60%	58.4		56.5		57.6		61.1	
Top 40%	41.6		43.5		42.4		38.9	
Low household income	36.0		28.7		20.6		22.2	
Middle household income	40.5		46.7		34.5		30.9	
High household income	23.5		24.6		44.9		46.9	
Not partnered	14.4		2.0		36.0		46.1	
Age (Mean (SD))	37.3 (6.6)		39.2 (6.9)		42.0 (9.4)		39.7 (9.4)	
Time use variables (hours per day)	Primary	Secondary	Primary ^(a)	Secondary ^(a)	Primary	Secondary	Primary ^(a)	Secondary ^(a)
Work activities								
Paid work	2.4	0.0	6.7***	0.0	4.2	0.7	5.6***	0.2
Domestic work	4.4	0.2	2.0***	0.1***	3.7	0.1	2.2***	0.1***
Child care (excluding sleep)*	3.1	3.1	1.3	1.3***	0.1	0.1	0.1**	0.0**
Child care (including sleep)*		5.5		2.7***		0.1		0.0**
Non-work activities								
Recreation and leisure	2.8	3.4	3.0**	3.5	3.6	4.1	4.4***	3.8*
Social interaction	0.7	0.2	0.6***	0.2*	0.8	0.2	0.7*	0.2
Voluntary work/care	0.2	0.0	0.1**	0.0	0.2	0.0	0.1	0.0
Education	0.1	0.0	0.1	0.0	0.2	0.0	0.2	0.0
Personal care	2.0	0.4	1.9*	0.2***	2.6	0.3	2.2***	0.2
Sleep	8.3	-	8.1**	-	8.5	0.0	8.5	0.0
Missing	0.1	-	0.1	-	0.1	-	0.1*	-
n persons/diaries	989/1961		795/1559		938/1852		900/1773	

- Table notes: (a) See page 7 for variable definitions. (b) Statistical significance is indicated in relation to tests comparing quantities across gender within parent/non-parent and primary-time/secondary-time groups. For example, there is a significant difference between the time spent in paid work done as a primary activity for mothers (2.4 hours per day) and fathers (6.7 hours per day). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 2: Hours per Day, Proportion of Daily Waking Time and Number of Episodes per Day not Multitasking (Primary Activity Only), or Multitasking Work and Non-Work Activities

	Time				Proportion of wake time ¹				Episodes			
	Parents		Non-parents		Parents		Non-parents		Parents		Non-parents	
	Mothers	Fathers	Women	Men	Mothers	Fathers	Women	Men	Mothers	Fathers	Women	Men
Work activities	Hours per day				%				Count per day			
No multitasking (primary activity only)	5.2	7.2***	5.9	6.1	32.7	44.4	37.7	38.6	10.4	6.9***	8.5	5.9***
Multitasked												
Child care with child care	0.7	0.2***	0.0	0.0*	4.3	1.2***	0.1	0.0*	2.2	0.5***	0.0	0.0*
Child care with domestic work	1.3	0.4***	0.0	0.0**	8.4	2.4***	0.2	0.1**	4.3	0.9***	0.1	0.0***
Child care with paid work	0.0	0.0	0.0	0.0	0.5	0.4	0.0	0.0	0.1	0.1*	0.0	0.0
Paid work with paid work, domestic work with paid work, domestic work with domestic work	0.0	0.0***	0.0	0.0***	0.6	0.2***	0.6	0.3***	0.3	0.1***	0.3	0.1***
Total work multitasked with work	2.2	0.7***	0.1	0.0***	14.0	4.2***	1.0	0.4***	6.9	1.5***	0.4	0.1***
Multitasked with non-work												
Child care with non-work	2.1	1.2***	0.0	0.0**	13.3	7.4***	0.6	0.3**	5.2	2.2***	0.2	0.1***
Domestic with non-work	1.1	0.6***	1.4	0.8***	7.3	3.7***	8.8	5.0***	3.3	1.5***	3.6	1.9***
Paid work with non-work	0.3	1.1***	0.5	0.9***	1.6	6.7***	3.3	5.5***	0.4	1.2***	0.9	1.0*
Total work multitasked with non-work	3.5	2.8***	2.0	1.7*	22.3	17.8***	12.6	10.7***	8.9	4.8***	4.7	3.0***
Grand total productive work	10.9	10.7*	8.0	7.8	68.9	66.4**	51.2	49.6	26.2	13.2***	13.6	9.0***
Non-work activities												
No multitasking (primary activity only)	3.2	3.6***	4.8	5.3**	20.6	23.0**	31.6	34.2**	8.2	7.9	10.8	9.9***
Other non-work multitasking	1.7	1.7	2.7	2.5	10.6	10.6	17.2	16.1**	3.5	3.1***	4.1	0.8

Total multitasking	7.4	5.2***	4.8	4.3**	46.9	32.6***	30.8	27.2***	19.4	9.4***	10.0	7.2***
Total no multitasking (primary activity only)	8.4	10.8***	10.8	11.4***	53.3	67.4***	69.2	72.8	16.9	13.1***	17.2	13.8***
Total wake time	15.8	16.0*	15.6	15.7	100	100	100	100	36.3	22.5***	27.2	21.0***

- Table notes: (a) See pages 7-8 for variable definitions. (b) Statistical significance is indicated in relation to tests comparing quantities across gender within parent/non-parent and primary-time/secondary-time groups. For example, there is a significant difference between the time spent in total multitasking for mothers (7.4 hours per day) and fathers (5.2 hours per day). (c) ¹Time spent in activity/wake time*100.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 3: Results of Linear Regression Analyses on Daily Hours Spent by Parents in Productive Activities with No Multitasking (M1), Daily Hours Spent by Parents in Productive Activity with Multitasking another Work or Non-work Activity(M2), and the Proportion of Parents' Total Daily Productive Activity Multitasked with Another Productive Activity(M3)

	M1: Hours per day productive activity not multitasked (primary activity only)	M2: Hours per day total productive activity multitasked with another activity (work or non-work)	M3: Proportion of total productive activity multitasked with another productive activity
Female	-3.66** (1.56)	6.16*** (1.12)	24.77*** (4.87)
Age of youngest child	0.22 (0.33)	-1.46*** (0.30)	-4.06*** (0.99)
Age of youngest child by female	0.88* (0.38)	-1.39*** (0.38)	-8.61*** (1.61)
Has a degree	0.09 (0.35)	0.42 (0.28)	1.12 (0.91)
Has a degree by female	0.06 (0.41)	0.77* (0.40)	-0.42 (1.66)
Socio Economic Indices For Area (SEIFA)	0.83** (0.29)	-0.24 (0.25)	-0.35 (0.72)
SEIFA by female	-0.83** (0.33)	0.70** (0.31)	1.77 (1.25)
Not partnered	-0.62 (1.17)	1.17** (0.50)	-1.69 (3.00)
Not partnered by female	0.77 (1.19)	-1.50** (0.59)	2.27 (3.26)
Age (years)	-0.01 (0.03)	-0.01 (0.02)	0.05 (0.07)
Age by female	0.03 (0.03)	-0.05* (0.03)	-0.26** (0.11)
Middle household income	1.28*** (0.35)	0.10 (0.30)	-1.19 (1.02)

Middle household income by female	-0.67* (0.39)	-0.02 (0.36)	-1.00 (1.49)
High household income	1.05** (0.41)	0.26 (0.34)	-1.67 (1.04)
High household income by female	0.08 (0.47)	-0.84* (0.44)	-2.78 (1.78)
Constant	6.7*** (0.47)	3.65*** (0.91)	8.75** (3.99)
R-squared	0.09	0.19	0.22

Table notes: (a) See pages 7-8, 11 for variable definitions. * $p < 0.10$, ** $p < 0.01$, *** $p < 0.001$

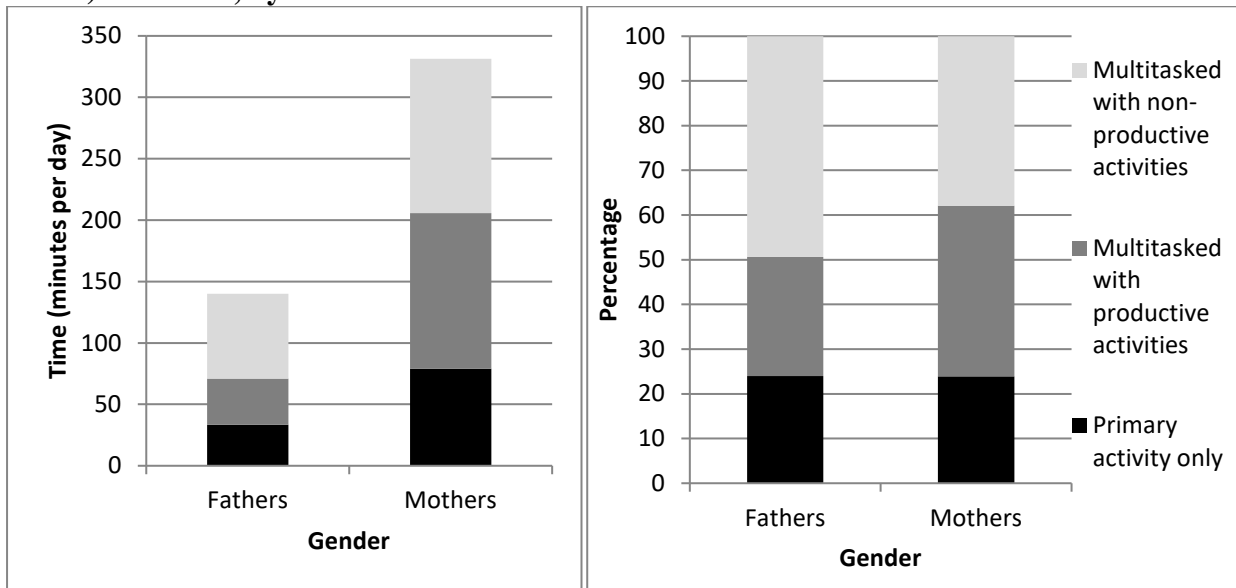
Table 4: Results of Logistic Regression Analyses Predicting Odds of Being “Always” Or “Often” Rushed or Pressed for Time

	Always or often rushed for time	
	M5	M6
	Odds ratio	Odds ratio
Female	1.14 (1.06)	1.24 (1.14)
Hours per day multitasking	0.99 (0.02)	1.09** (0.05)
Hours per day multitasking by female	1.05* (0.03)	1.02 (0.06)
Proportion of total work time multitasking two work activities		0.92 (0.06)
Proportion of total work time multitasking two work activities by female		1.05 (0.10)
Proportion of total work time multitasking a work and a non-work activity		0.87** (0.04)
Proportion of total work time multitasking a work and a non-work activity by female		0.99 (0.06)
Age of youngest child	0.82 (0.18)	0.86 (0.19)
Age of youngest child by female	1.11 (0.31)	1.14 (0.32)
Has a degree	1.32 (0.29)	1.13 (0.29)
Has a degree by female	0.98 (0.29)	0.96 (0.29)
Socio Economic Indices For Area (SEIFA)	1.53** (0.30)	1.49* (0.29)
SEIFA by female	0.64* (0.16)	0.67 (0.16)
Not partnered	1.77 (0.95)	1.95 (1.01)
Not partnered by female	0.70 (0.41)	0.61 (0.34)
Age (years)	0.94 (0.07)	0.93 (0.07)
Age by female	1.01 (0.02)	1.01 (0.02)
Middle income	1.29 (0.27)	1.24 (0.26)
Middle income by female	0.88 (0.21)	0.93 (0.23)
High income	1.73** (0.20)	1.67** (0.43)
High income by female	1.19 (0.40)	1.28 (0.43)

Table notes: (a) See pages 7-8, 11 for variable definitions. b) Odds ratios, not marginal effects, are presented and the numbers should be interpreted accordingly.

* $p < 0.10$, ** $p < 0.01$, *** $p < 0.001$

Figure 1: Parents' Daily Child Care Time by Whether It Is a Primary Activity Only, Multitasked with Productive (Work) Activities, or Multitasked with Non-Productive (Non-Work) Activities, by Gender



ⁱ We use productive activity and work activity as umbrella terms because both paid and unpaid work contribute to the economic living standards of households (Folbre, 2004; Gershuny, Godwin, & Jones, 1994; Ironmonger, 1996). We acknowledge that non-work activities such as exercise are productive in non-economic ways.

ⁱⁱ This is to account for differences in average sleep time between men and women because prior work found that some respondents record childcare as a secondary activity to sleep, and because some research suggests working mothers cut back on sleep in order to meet their time commitments to paid work and child care (Bianchi, 2005; Craig, 2007a; Venn, Arber, Meadows, & Hislop, 2008).

ⁱⁱⁱ ABS time use diaries are structured so that two days' worth of time is sampled for each person. This means that the assumption of independence is violated. Clustering standard errors within household takes this dependence into account.

^{iv} For example helping one child do his or her homework, while simultaneously supervising another child's bath. Note this means that performing child care for multiple children is counted as multitasking unless all are receiving the same type of care at once (for example reading to several children to together).