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A typology of US parents' mental loads: Core and episodic cognitive labor

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Abstract

Objective: This article examines whether domestic cognitive labor functions like other forms of domestic labor as a means to "do gender."

Background: Domestic cognitive labor is increasingly conceptualized as the invisible thinking work associated with childcare and housework. A critical question for this growing literature is the gender distribution of cognitive labor tasks: do women do it all, or does domestic cognitive labor follow similar patterns to other forms of domestic physical labor (e.g., childcare and housework), cleaving by separate spheres of activity? In this regard, is domestic cognitive labor another way parents "do gender" at home?

Methods: Applying unique survey data from a sample of US parents ($N = 3000$), we assess a 21-item battery measuring different domestic cognitive labor tasks. We first apply exploratory factor analysis and confirmatory factor analysis to identify whether domestic cognitive labor holds underlying constructs. Second, we estimate whether gender differences in these indices are robust in regression models net of a range of sociodemographic factors.

Results: We identify that domestic cognitive labor, like other forms of domestic labor, forms two distinct facets, with mothers holding the bulk of the core *Daily* tasks related to family well-being and fathers holding the *Episodic* tasks related to maintenance and finances. Further, we document that, consistent with previous housework literature, question wording structures parents' reported contributions by gender.

Conclusion: Ultimately, our study expands our theoretical, conceptual, and methodological understanding of

Ana Catalano Weeks and Leah Ruppanner contributed equally to this work.

domestic cognitive labor and points to the value of "doing gender" perspectives.

KEYWORDS
caregiving, gender, gender roles, housework, parents

INTRODUCTION

Domestic cognitive labor is the thinking work needed to keep life functioning. Although domestic cognitive labor has a long history in academic scholarship (Gopher, 1994; Walzer, 1996), it is of increasing academic interest given the immense challenges parents face managing work and family. As a consequence, scholars are increasingly focused on the domestic cognitive labor associated with the private sphere and its associated domestic work (see Reich-Stiebert et al., 2023 for review). This work is distinct from other forms of housework, chores, childcare, and emotional work because it is explicitly aimed at accomplishing shared goals (Robertson et al., 2019). It includes cognitive labor tied to the scheduling, planning, and organizing of family life (Daminger, 2019). Consistent with other forms of domestic labor (e.g., housework and childcare), women do more of this labor (Daminger, 2019; Haupt & Gelbgiser, 2023; Kincaid, 2021; Petts & Carlson, 2023). But unlike physical household and care labor, which is characterized by an upward trend in fathers' participation in many contexts over time (e.g., Altintas & Sullivan, 2017), qualitative research documents domestic cognitive labor as highly gendered even within couples who identify as gender-egalitarian (Daminger, 2020). According to this emerging line of studies, domestic cognitive labor is thus similar to other forms of unpaid household labor in that it is gendered but differs in that it may be characterized by even less gender equality.

Yet, the challenge for many family scholars is an understanding of what is domestic cognitive labor, and how it is enacted. Thus far, research on domestic cognitive labor focuses primarily on building an understanding of the processes of cognitive household labor and its different components. Daminger (2019) applies qualitative interview data to document that domestic cognitive labor is associated with 9 broad groupings: (1) food, (2) childcare, (3) logistics and schedules, (4) cleaning and laundry, (5) shopping, (6) home maintenance, (7) travel and leisure, (8) finances, and (9) social relations. Following this conceptualization, recent scholarship has developed novel quantitative measures of these categories (Petts & Carlson, 2023; Weeks, 2022); we follow this estimation strategy. Others apply existing survey indices developed to capture the planning work associated with some of these activities (Ciciolla & Luthar, 2019; Haupt & Gelbgiser, 2023; Treas & Tai, 2012) or develop indices based on the popular self-help book *Fair Play*'s task categories (Aviv et al., 2024). From this scholarship, patterns consistent with the qualitative research emerge, notably that mothers hold a larger share of the overall domestic mental load.

Yet, absent from this research is a more detailed understanding of whether domestic cognitive labor functions in ways similar to other forms of domestic labor, an act of "doing gender" within the home (West & Zimmerman, 1987). Decades of domestic scholarship show mothers assume the bulk of the core and time-intensive childcare tasks and fathers the episodic and less urgent tasks (Bianchi et al., 2000; Geist & Ruppanner, 2018; Hook, 2010; Twiggs et al., 1999). This begs the question: Does domestic cognitive labor follow a similar pattern of "doing gender" whereby "accountability" to doing gender "sits at its core" (West & Zimmerman, 2009)? Or is domestic cognitive labor, as administrative, management work, itself coded female and thus characterized by mothers' disproportionate work across core and episodic tasks? Here, we contribute to this theoretical understanding of domestic cognitive labor by assessing whether

domestic cognitive labor cleaves by activity and gender, reflecting a pattern similar to physical domestic tasks.

To make progress on these theoretically driven questions, we draw upon a survey from a sample of US parents ($n = 3000$) selected to be representative of the US population of parents with regards to age, race/ethnicity, gender, and education. Employing a quantitative approach gives us the statistical power to investigate how patterns of responses cluster by category and gender. In addition, we contribute valuable new evidence that is generalizable to the diverse population of US parents—an important step given much of our understanding of cognitive household labor to date comes from small samples of often highly educated, different-sex couples. Applying a battery of 21 distinct measures of domestic cognitive labor, we assess whether it is a single, composite measure or forms distinct indices. We then document the gender distribution of domestic cognitive labor across these measures to understand whether domestic mental work follows other forms of unpaid work characterized by core and episodic tasks. Finally, we compare our item-based scale to respondents' own estimates of their total mental work contributions to the household to understand the extent to which question wording structures parents' estimates, as evidenced by previous research on physical domestic labor (Lee & Waite, 2005; Yavorsky et al., 2015).

In summary, the main contributions of this study are: (1) to provide a new understanding of the underlying dimensions of domestic cognitive labor from a large sample of mothers and fathers that mirrors the diverse population of US parents on certain Census-based characteristics (gender, age, education, and ethnicity); (2) to make progress on measurement strategies by considering how cognitive labor estimates depend on the way questions are asked; and (3) drawing on these two insights, to deepen our theoretical knowledge about whether domestic mental work is another way parents "do gender" at home. Unlike previous quantitative studies of domestic cognitive labor which tend to focus on mothers (Aviv et al., 2024; Ciciolla & Luthar, 2019) or on individuals or couples in different-sex relationships (Haupt & Gelbgiser, 2023; Petts & Carlson, 2023), our evidence is based on a large sample of mothers and fathers with and without (different- and same-sex) partners. Further, our study offers new evidence about gender differences in domestic cognitive labor that is generalizable to the diverse population of US parents. Ultimately, this research provides a novel theoretical and empirical understanding of domestic cognitive labor.

Domestic cognitive labor as core and episodic tasks

Domestic cognitive labor has been understood as another form of unpaid domestic labor associated with the smooth functioning of the family, distinct from childcare and housework. Foundational research identifies domestic cognitive labor as a distinct form of household management capturing the planning, managing, decision-making, and monitoring necessary to ensure children's needs and household demands were completed (Berk & Berk, 1979; Coltrane, 1989; Mederer, 1993). Tracking children's vaccinations, Walzer (1996) added worry work and researching best practices into the domestic cognitive labor process. Zimmerman et al. (2002) included reminding in this process. As domestic cognitive labor literature evolved over time, it became clear that the process of doing domestic cognitive labor included four main tasks: (1) planning, (2) coordinating, (3) decision-making, and (4) monitoring (see Reich-Stiebert et al., 2023 for review). We draw upon this theorization to measure domestic cognitive labor and capture its associated processes.

In addition to the domestic cognitive labor process, scholarship has conceptualized its domains. One stream measures domestic cognitive labor in a singular domain, either associated with housework (Ahn et al., 2017; Haupt & Gelbgiser, 2023; McLean et al., 2023; Schilperoort, 2021) or childcare tasks alone (Bass, 2015; Daly, 2002; Kincaid, 2021;

Moore, 2017; Walzer, 1996). A second and larger stream estimates domestic cognitive labor across these domains—to housework *and* childcare (Czymara et al., 2021; Daminger, 2019; Faircloth, 2021; Luthra & Haux, 2022; Petts & Carlson, 2023; Robertson et al., 2019; Treas & Tai, 2012; Weeks, 2022). We follow the latter to estimate parents' domestic cognitive labor invested in ensuring housework and childcare tasks are completed.

Where we advance our understanding is to assess whether the domestic mental load functions as another form of gender-display at home. Foundational research on housework and childcare notes it becomes a way that parents "do-gender" at home (South & Spitze, 1994; West & Zimmerman, 1987). Specifically, mothers and fathers enact specific household tasks and avoid others to exhibit traditional gender norms rooted in separate spheres of ideologies (West & Zimmerman, 1987). While gender is being "un-done" in many partnerships (Deutsch, 2007; Risman, 2009), research shows that gender still remains an important predictor of parents' allocations of housework and childcare (Davis, 2023). These relationships are well established with physical domestic demands. Yet, the question remains whether the social power of gender is reflected in the cognitive labor necessary for physical domestic labor.

Drawing upon this theoretical framework, housework scholarship has long identified the core and episodic nature of housework (Lee & Waite, 2005). Core housework chores capture those that are more frequent for family functioning and cannot be delayed. These include cooking, grocery shopping, doing dishes, cleaning, and laundry (Bianchi et al., 2000; Geist & Ruppanner, 2018; Hook, 2010; Twiggs et al., 1999). Episodic tasks, by contrast, are characterized as less frequent and easily delayed. These include chores associated with outdoor tasks like gardening, small household maintenance and repairs, and family finances (Bianchi et al., 2000; Geist & Ruppanner, 2018; Hook, 2010; Twiggs et al., 1999). Mothers are shown to assume a larger share of the core chores and fathers the episodic (Hook, 2010).

Childcare also takes multiple forms (Hook, Ruppanner, & Casper, 2021). One is time spent in the physical care of children, including bathing, feeding, dressing, supervising, transporting, and waiting. Another is time in interactive care, including talking, reading, teaching, and playing. A third is time spent supervising children which can often be done in tandem with another activity (e.g., cooking while supervising children who are engaged in another task). Mothers are shown to assume a larger share of the total time with children and engage in their physical care with interactive care more equally shared (Hook, Ruppanner, & Casper, 2021). Mothers spend more physical time with children, multitasking activities, and in more arduous care with fathers assuming more of the pleasurable activities (Craig, 2006). Simply, childcare and housework are composed of a range of tasks that are distributed differently by gender. This functions as a critical way that traditional gender norms are reinforced in the home, through gender-display (West & Zimmerman, 1987).

Here, we test whether the gender typing identified through physical domestic labor is evident for cognitive labor. Daminger's (2019) qualitative research shows mothers and fathers hold different dimensions of the domestic cognitive load, with fathers doing more of the "decision-making" work and mothers the anticipating, identifying, and monitoring work. Additionally, 7 of the 9 domains Daminger (2019) investigates are more woman- than man-led (the exceptions being the less routine finances and home/car maintenance work). In this regard, the distribution of domestic cognitive labor tasks indeed appears gendered along separate spheres of activity; this begs the question of replicability with a large quantitative survey. Specifically, we directly test whether domestic cognitive labor forms a single dimension or cleaves into a taxonomy similar to its physical domestic labor. Further, we assess whether these patterns are gendered. This allows us to make a theoretical contribution to our understanding of domestic cognitive labor by establishing whether it forms another way that parents "do gender" at home.

Drawing upon previous research identifying mothers' disproportionate share of the physical labor of housework and childcare, we derive our first hypothesis:

Mental work divided to "do-gender"

H1. Cognitive household labor is not unidimensional; core, routine domestic cognitive labor tasks are empirically distinct from episodic domestic cognitive labor responsibility.

H1a. These two cognitive labor types are stratified by gender, with mothers reporting doing more core cognitive labor related to day-to-day family life and fathers reporting more episodic domestic cognitive labor.

Alternatively, domestic cognitive labor may form a single composite measure. It may be that mothers carry heavier domestic cognitive loads across all activities (e.g., in both core and episodic domains). Existing scholarship documents mothers' roles as the "household manager," in part, reflected through their propensity to absorb a larger share of domestic cognitive labor and mental loads (Alby et al., 2014; Ciciolla & Luthar, 2019; Offer, 2014; Robertson et al., 2019; Treas & Tai, 2012; Winkler & Ireland, 2009; Zimmerman et al., 2002). Therefore, domestic cognitive labor may capture an aggregated experience with mothers carrying the bulk of the emotional thinking work across all tasks. This would mirror arguments that mothers function like a household manager, holding the cognitive load for all tasks and then distributing tasks to each family member. This is still a means of "doing gender" with mothers stepping into the manager role based on social norms, but it means that domestic cognitive labor may form a singular measure with mothers performing the bulk.

Of course, these dynamics may be eroded in single-parent households. Specifically, the absence of a (heterosexual) partner means that parents, regardless of gender, will perform the bulk of the domestic cognitive labor. Thus, the mental load may form a singular index for this group, with the structural composition of single-parent families functioning in ways that do not conform to traditional gender norms given the absence of another partner in the home. It may function as a means to "undo gender" at home with single parents assuming the bulk of both men and women-typed tasks (Risman, 2009) and thus modeling this behavior to children who witness parents performing a wider range of gender-stereotyped domestic tasks. Thus, the absence of another parent in the home may lead single parents to absorb the entire domestic cognitive labor load.

Given the exploratory nature of this article, we present the competing hypotheses in the following sections.

"Doing-gender": Mothers as household managers

H2. Domestic cognitive labor will form a singular composite index.

H2a. Mothers will carry heavier mental loads across this composite index than fathers.

"Undoing" gender: Single Parents' mental work

H3. Single parents' mental work will form a composite index with no significant gender differences.

Domestic cognitive labor as a subjective measure

Another lesson derived from scholarship on domestic work is that respondents are often inconsistent in their housework estimates based on question wording. Lee and Waite (2005) provided a multi-modal estimate of couples' housework time, as self-reported shares and time use, to identify inconsistencies in these estimates. They found both husbands and wives overestimated their self-reported housework contributions when compared to their time diaries. Further, husbands' overestimates were significantly larger than wives (Lee & Waite, 2005). Indeed, wives were more accurate at estimating their husbands' housework contributions than husbands themselves, another form of household management (e.g., surveillance of family members' household contributions). This is consistent with work from Yavorsky et al. (2015) on the transition into parenthood who also compare time diaries to survey responses for parents. They find both mothers and fathers overestimate their housework and physical childcare contributions but fathers overestimate housework time and mothers' childcare time. These patterns may replicate for domestic cognitive labor, especially because this labor is performed in our minds and thus often invisible. The gender-display theory posits that each partner is enacting gendered labor for an audience (e.g., the other partner or children). But it is possible that the "display" may be disputed by the other partner or not recognized given the invisibility of domestic cognitive labor. Understanding these dynamics is important given that inconsistencies in partners' views of the others' housework contributions negatively impact relationship quality, leading to greater thoughts of splitting up and, over time, separation (Ruppanner, Branden, & Turunen, 2017).

Here, we test this theoretical assumption by comparing two estimates of domestic cognitive labor—parents' self-reported total share of the families' entire mental workload and their share of each individual component—to identify whether parents are consistent in their estimates. It may be that mothers and fathers agree that mothers carry heavier domestic cognitive labor across all domains, either in the composite measure (consistent with H2a) or across their multifactorial components (consistent with H1b). Alternatively, respondents may report different allocations based on the question wording. For example, parents may report contributing a larger share of the aggregate domestic cognitive labor than is evident across each task type. Critically, these patterns may vary by gender, meaning the domestic cognitive labor may again pattern in ways that are similar to other forms of domestic work (Lee & Waite, 2005). Thus, we also test whether the question wording—asking for the total household domestic cognitive labor share—matches the individual item-based estimates. This speaks directly to theoretical arguments about awareness of household happenings functioning as another way mothers "do gender" to care for their families. It also demonstrates whether domestic cognitive labor is susceptible to divergent responses based on question wording.

From this, we derive our final hypotheses:

Inconsistencies in domestic cognitive loads

H4a. Mothers and fathers will both inflate their aggregate contribution to the households' total cognitive domestic load as measured by our 21-item battery.

H4b. Fathers' overestimates will be significantly higher than those of mothers.

DATA AND METHODS

This study applies data from a unique survey collected from a large sample of US parent respondents. The survey was fielded in February and March of 2023 via the survey firm Dynata

and (through the use of quotas) mirrors the US population of parents with respect to age, race/ethnicity, gender, and education.[1] The sample of 3000 respondents are all parents of children aged 18 and younger. The data capture a diverse range of domestic cognitive labor components which help us to understand the different ways parents perform it. Tables A1 and A2 of the Supplemental Material present information on representativeness and summary statistics.

MEASURES

Dependent variables

We measure domestic cognitive labor in two ways—*task-based* and *self-reported*. For *task-based cognitive labor*, we apply a battery of survey questions that capture domestic cognitive labor across seven broad categories: (1) cleaning, (2) scheduling, (3) childcare, (4) maintenance, (5) finances, (6) social relationships, and (7) food. While not exhaustive, these categories reflect the majority of cognitive labor domains identified in previous research (Daminger, 2019).[2]

Within each of these broad categories are a series of statements to capture the diverse mental work performed to ensure household functioning (see Table 1 for the full list). Respondents were asked, "In your family, who typically handles" each task, with the following response options: "Mostly me," "Mostly my partner," "Partner and I share equally," "Someone else (Includes friends and family)," and "NA." To develop the specific questions, we read through qualitative studies of household mental load (these include Coltrane, 1996; Daminger, 2019; Hochschild, 1989; Robertson et al., 2019), seeking examples that are frequently used in the literature.[3] The question items were pilot tested among small samples of parents and found to be applicable to the majority of respondents.[4] The average number of "not applicable" responses among the 21 items is 0.7, affirming that the vast majority of items are relevant to respondents' lives. We provide descriptive data across response options by gender in Table 2.

For the sake of analysis, we operationalize all individual domestic cognitive labor items as binary variables, coded as 1 if the respondent says the task is done by "mostly me," and 0 otherwise. While this binary coding means we lose some information about cognitive labor responses, it offers some important advantages. First, it provides a straightforward measure of (perceived) individual responsibility for different types of cognitive labor. Second, it is consistent with some previous studies (see Ciciolla & Luthar, 2019, which also employs a binary measure based on the "mostly me" response), allowing for comparison across results. The questions thus measure (perceived) primary responsibility for mental work across different categories. We use these measures to identify how domestic cognitive labor is distributed across individuals and whether they cluster to form one or more underlying dimensions.

To capture *self-reported* cognitive labor, respondents were asked about the division of work in their household through the following statement: "Considering all the mental work to take

[1]Dynata built a custom quota plan for the survey based on US Census data from the 2021 Annual Social and Economic Supplement, compiling figures for age, race/ethnicity, gender, and education using data for parents with dependent children.

[2]To avoid survey fatigue and keep the survey relatively short, we leave out two of Daminger's 9 categories: "travel/leisure" (e.g., planning a vacation) and "shopping/purchasing" (e.g., identifying items to purchase). Importantly, both are domains which tend to be women-led (Daminger, 2019), meaning that if anything our item-based measure could underestimate the share of domestic cognitive labor done by women. Further, we note that investing cognitive labor into "travel/leisure" may be highly classed and thus requires more detailed testing before implementing for a more diverse representative sample.

[3]For example, item 9 in Table 1 (noticing when children's nails need to be cut) makes up part of Hochschild's (1989) line of questioning about household tasks ("I asked who did most household planning, who noticed such things as when a child's fingernails need clipping…", p30). Item 8 (deciding on a child care provider) is described in Coltrane 1996 as one of the Carter family's household tasks (see "Sharing the Worry of Child Care," p12).

[4]The pilot testing included an online parenting group, where members who took the survey were asked to give feedback on the clarity and relevance of cognitive labor items, including whether these questions could be improved to better reflect mental load work, and a small sample of 200 parents collected via the Harvard Digital Lab for the Social Sciences.

TABLE 1 Domestic cognitive labor question items.

Category	Question item *In your household, who typically does the following?*
Cleaning	1. Keeping track of when sheets and towels need to be washed 2. Cleaning out kids' clothes that no longer fit. 3. Noticing when the house needs to be tidied.
Scheduling	4. Keeping track of the family calendar, such as kids' medical appointments. 5. Planning a family event, like a birthday party. 6. Remembering to schedule appointments, such as dentist appointments.
Childcare	7. Researching options for new items children need, like school supplies or shoes. 8. Deciding on a child care provider (e.g., babysitter, daycare, camp). 9. Noticing when children's nails need to be cut.
Maintenance	10. Noticing when something like a dishwasher or faucet needs repair. 11. Booking a repair professional like a plumber or mechanic. 12. Remembering when items like a boiler or car need servicing.
Finances	13. Researching options for financial products like bank accounts or insurance. 14. Deciding how to allocate money (such as paying off credit cards or increasing savings). 15. Keeping track of household expenses.
Social relationships	16. Finding social options for children's enrichment (sports classes, clubs, etc.). 17. Coordinating a playdate. 18. Checking in with family and friends.
Food	19. Keeping track of which groceries need to be purchased. 20. Deciding what meals to cook. 21. Monitoring food for "sell-by" dates, or noticing when foods need to be thrown away.

care of your household, about how much of this work is done by you as opposed to someone else?" Respondents could select values between 0 (none of it) and 100 (all of it).

Given that the task-based and self-reported domestic cognitive labor estimates are on consistent scales, we construct a measure of *cognitive labor mismatch* by subtracting the *task-based* cognitive labor measures from the *aggregated self-reported* cognitive labor. For example, if mothers' mean self-estimated share of cognitive labor is 78% and their mean task-based mental load share is 71%, the mismatch would be +7, or an "over-estimate" of 7 percentage points. The measure captures the extent to which respondents overestimate or underestimate their self-reported total contribution vis-à-vis their responses to the task-based measures.

Independent controls

To measure baseline gender gaps in domestic mental work, we deliberately do not control for other covariates because these can be considered "post-treatment," typically occurring after gender, and often associated gender identity, is "assigned" (Sen & Wasow, 2016). However, we also estimate models which control for a host of characteristics which have been shown to structure the gender distribution of housework (see Lachance-Grzela & Bouchard, 2010 for review) and childcare (see Monna & Gauthier, 2008 for review). In this way, we establish whether relationships between gender and domestic cognitive labor persist net of traits associated with both gender and household work (i.e., potential confounders). We control for the following sociodemographic controls: having a live-in partner (1 = yes; 0 = no), employment status (employed = 1; else = 0), high personal income level (1 = $100,00 or greater per annum), relative income in the household (earns more than partner), self-reported share of physical household labor (ranging from 0 to 100), number of children in the household, age of youngest child,

TABLE 2 Mean responses to task-based domestic cognitive labor question items, by gender.

		Mothers				Fathers			
Category	**Question item: in your household, who typically does the following?**	**Mostly me**	**Mostly partner**	**Share equally**	**Other**	**Mostly me**	**Mostly partner**	**Share equally**	**Other**
Cleaning	1. Keeping track of when sheets and towels need to be washed	81%	5%	12%	2%	41%	31%	26%	3%
	2. Cleaning out kids' clothes that no longer fit	85%	3%	8%	5%	30%	45%	19%	5%
	3. Noticing when the house needs to be tidied	76%	4%	17%	2%	40%	24%	34%	2%
Scheduling	4. Keeping track of the family calendar, such as kids' medical appointments	83%	4%	10%	3%	37%	35%	25%	3%
	5. Planning a family event, like a birthday party	79%	4%	13%	4%	32%	39%	27%	3%
	6. Remembering to schedule appointments, such as dentist appointments	83%	4%	11%	3%	34%	33%	30%	3%
Childcare	7. Researching options for new items children need, like school supplies or shoes	80%	4%	12%	4%	36%	27%	32%	4%
	8. Deciding on a child care provider (e.g., babysitter, daycare, camp)	62%	3%	17%	19%	28%	25%	32%	15%
	9. Noticing when children's nails need to be cut	75%	4%	11%	10%	31%	36%	26%	8%
Maintenance	10. Noticing when something like a dishwasher or faucet needs repair	52%	21%	21%	6%	69%	11%	18%	3%
	11. Booking a repair professional like a plumber or mechanic	45%	28%	15%	12%	65%	15%	15%	6%
	12. Remembering when items like a boiler or car need servicing	42%	30%	21%	8%	69%	10%	17%	4%
Finances	13. Researching options for financial products like bank accounts or insurance	55%	18%	24%	4%	66%	10%	22%	2%
	14. Deciding how to allocate money (such as paying off credit cards or increasing savings)	52%	17%	26%	5%	57%	16%	25%	2%
	15. Keeping track of household expenses	61%	13%	23%	4%	57%	17%	24%	2%
Social relationships	16. Finding social options for children's enrichment (sports classes, clubs, etc.)	68%	5%	18%	9%	38%	26%	31%	5%
	17. Coordinating a playdate	68%	5%	12%	16%	30%	38%	22%	11%
	18. Checking in with family and friends	64%	3%	27%	5%	35%	23%	39%	3%

(Continues)

TABLE 2 (Continued)

Category	Question item: in your household, who typically does the following?	Mothers				Fathers			
		Mostly me	Mostly partner	Share equally	Other	Mostly me	Mostly partner	Share equally	Other
Food	19. Keeping track of which groceries need to be purchased	77%	5%	16%	2%	48%	22%	28%	2%
	20. Deciding what meals to cook	75%	6%	17%	3%	39%	31%	28%	3%
	21. Monitoring food for "sell-by" dates, or noticing when foods need to be thrown away	77%	4%	15%	4%	45%	22%	30%	3%

Note: The category "Other" includes both, "Someone else (includes friends and family)" and "Not applicable". Cell entries are rounded to the nearest whole number.

age, education, ethnicity, sexual orientation, and gender-traditional values (level of agreement from 0–1 to 2 items, "a preschool child is likely to suffer if his or her mother works" and "a job is alright, but what most women really want is home and children"; higher values = more agreement; Cronbach's alpha = 0.68).

METHODOLOGY

Our methodological approach is staged. We first describe the novel task-based data across all survey items by gender, before identifying whether domestic cognitive labor forms distinct indices. Next, we identify whether estimations are consistent across the task-based and self-reported aggregate cognitive labor measures, and finally, we explain the gendered variation across these measures.

To identify whether domestic cognitive labor forms one or multiple indices (testing H1–H3), we rely on factor analysis, which tests the existence of latent dimensions in the data. Factor analysis provides evidence about whether responses to domestic cognitive labor question items are part of the same underlying response patterns (H2, H3), or whether they form two distinct core and episodic dimensions (H1). Following best practices for identifying latent dimensions using factor analysis (Cavaillé & Trump, 2015; Matsunaga, 2010), we randomly divide the survey sample in half and run separate analyses on each subsample. We first perform an exploratory factor analysis (EFA) on the first half of the data, which lets all the survey items freely load on any latent dimensions (1, 2, or more). Then, we perform confirmatory factor analysis (CFA) on the second half of the data to check that the underlying data structure uncovered in EFA holds. CFA has the added benefit of returning a more reliable estimate of correlations between latent dimensions compared to EFA. To test the remainder of our hypotheses, we evaluate the relationship between gender and different measures of domestic cognitive labor using differences in means tests and linear regression models.

After identifying the latent construct of domestic cognitive labor, we then test whether it exhibits similar patterns of overestimation across *aggregated* and *task-based estimates* that are evident in other types of domestic labor (H4), and whether these patterns are gendered (H4a), with fathers overestimating more than mothers (H4b). Finally, we present a series of *t*-tests and multilinear OLS regression models to formally test for gender gaps in domestic cognitive labor net of sociodemographic confounders (H1a and H2a).

RESULTS

Descriptive data

Table 2 presents descriptive data across response options for each task-based survey item, showing the percentage of mothers and fathers who report "Mostly me," "Mostly my partner," "Share equally," and "Other," which combines the response options "Someone else (includes friends and family)" and "Not applicable." The patterns observed in Table 2 suggest that mental load work varies by category among both fathers and mothers. Mothers report primary responsibility ("Mostly me") for the vast majority of survey items, with the highest levels observed in cleaning (e.g., "Cleaning out kids' clothes that no longer fit"; 85%), scheduling (e.g., "Keeping track of the family calendar"; 83%), and childcare (e.g., "Researching options for new items children need"; 80%). Mothers report lower levels of primary responsibility and greater sharing for home maintenance and finances work. These results are broadly consistent with recent studies of mothers' cognitive household labor (Aviv et al., 2024; Ciciolla & Luthar, 2019), which

report high levels of responsibility for household routines and childcare but lower primary responsibility for finances and home maintenance.

Fathers, conversely, report the highest levels of primary responsibility for these two categories. For example, in the home maintenance category, 69% of fathers say they are mostly responsible for "remembering when items like a boiler or car need servicing," and in the finances category, 66% of fathers report being mostly responsible for "researching options for financial products like bank accounts or insurance." The table also suggests that fathers are more likely to view the items women claim primary responsibility for as equally shared than are mothers. For example, in the scheduling category, 30% of fathers say that "remembering to schedule appointments" is shared equally while only 10% of mothers agree. Overall, the patterns in Table 2 suggest that, rather than forming a single dimension of household work, domestic cognitive labor clusters into two gendered categories. This provides initial evidence in line with H1 and H1a, which we formally test in the subsequent analysis.

Factor analysis

Figure 1 presents a variables factor map from the results of our exploratory factor analysis (full results of the EFA are shown in Table A3 of the Supplemental Material). The results are

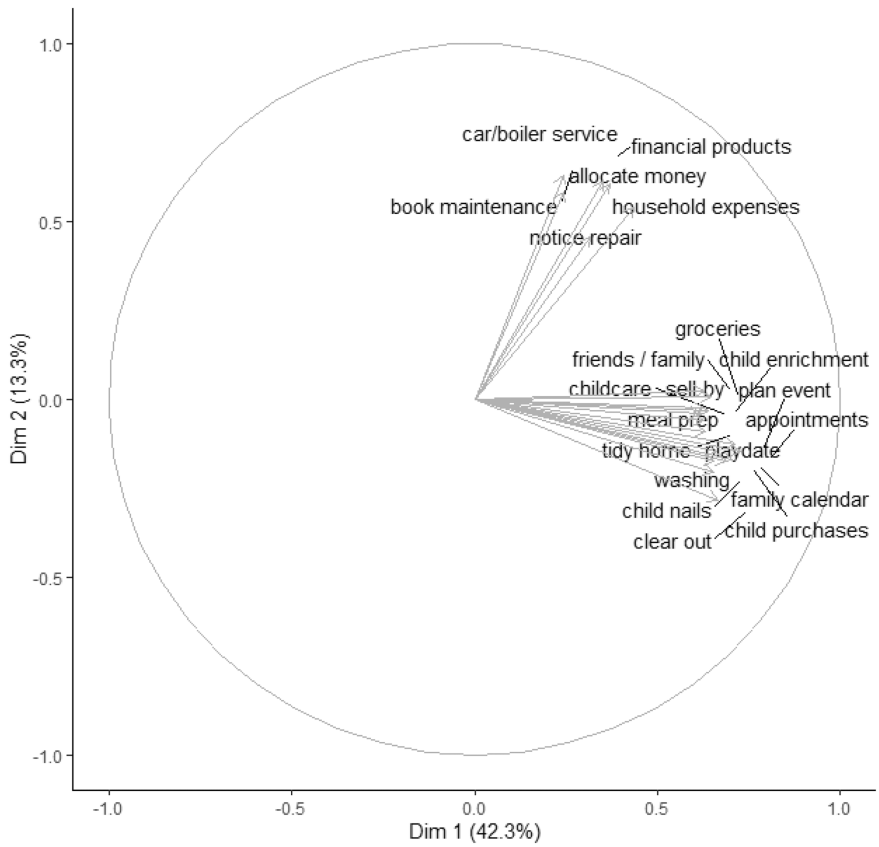

FIGURE 1 Exploratory factor analysis variables factor map. EFA was performed using a principal-component extraction method using the FactoMineR package in *R*. $N = 1500$ (sample 1). See Table A3 for the full results on which this figure is based.

consistent with our hypothesis identifying two factors capturing the underlying correlations across these measures (H1 supported; H2 rejected). The variables factor map identifies two distinct and largely orthogonal dimensions, which together explain 56% of the shared variance.[5] The first factor, the large cluster of items on the right of Figure 1, captures domestic cognitive labor associated with stereotypically "feminine" domestic tasks including: cleaning, scheduling, childcare, social relationships, and food. We classify this factor as the *Daily* domestic cognitive labor given these components are associated with the regular, essential, and daily housework and childcare tasks that are critical to the well-being of the members of the household. The second factor, the smaller cluster toward the top of Figure 1, forms the more episodic tasks associated with two components—maintenance and finances. We classify this factor as the *Episodic* domestic cognitive labor given these tasks are shown to be infrequent, easily delayed, and external concerns to the operation of the household. While both facets of domestic cognitive labor are important and necessary, one tends to be more intensive than the other. *Daily* domestic cognitive labor supports the day-to-day welfare, health, and relationships of family members, while *Episodic* domestic cognitive labor sustains the financial condition and physical facilities within which the family exists.

Because all of the survey items load highly on only one dimension in the EFA (above 0.5; see Supplemental Material, Table A3), we keep them all in the subsequent CFA analysis which imposes a preconceived two-dimensional structure on the data. We perform the CFA using the second half of the survey data and present the resulting factor loadings in Table 3. The CFA, shown in Table 3, shows a reasonably good fit to the data: RMSEA = 0.08, CFI = 0.99, and TLI = 0.99 (these all fall within recommended cutoff levels; Browne & Cudeck, 1993; Hu & Bentler, 1999). Overall, the factor analyses show that the data does not support a single, composite view of domestic cognitive labor responsibility (rejecting H2). Instead, in line with H1, core and episodic domestic cognitive labor form two distinct dimensions.

We test the sensitivity of our factor analysis findings across different operationalizations of domestic cognitive labor and subsamples of the data. First, acknowledging that the binary measure of primary responsibility for domestic cognitive labor reduces variation in our data, we rerun the exploratory factor analysis using an ordinal measure, where "mostly me" is coded 2, "shared equally" 1, and "mostly partner" and "someone else" 0. The results are substantially the same: question items cluster into two distinct and largely orthogonal clusters explaining 38% (daily) and 14% (episodic) of the variation in the data, with diagnostic scree tests indicating leveling off after two factors (see Appendix, Figure A1).

Second, to further investigate the role of gender in driving factor analysis findings, we rerun the exploratory factor analysis among subsamples of mothers and fathers. Again, the same two-factor result holds in each analysis, albeit with more distinct clustering among fathers (see Appendix, Figures A2 and A3). Among both mothers and fathers, two factors together explain a large proportion of the variance (47% for mothers and 52% for fathers), and diagnostic scree tests indicate a flattening out after the second factor, meaning that additional factors would not contribute significantly to explaining variance in the data. These results suggest that both mothers and fathers differentiate between the daily and episodic cognitive labor tasks, doing-gender by taking on different types of domestic mental work.

Third, acknowledging that single parents are more likely to report doing all the domestic cognitive labor compared to parents with a spouse or partner, we conduct additional analysis to identify whether the distinct dimensions we find hold among the subsample of single parents (Figure 2). Consistent with our expectations (H3) and contrary to the main findings (H2), we find that single parents are indeed the household managers; for them, the composite index

[5]The diagnostic scree test shows that after two components, the Eigenvalues of subsequent factors drop significantly, supporting the choice to retain two dimensions (Osborne & Costello, 2009). The EFA results are robust to using a polychoric correlation matrix, adapted to ordinal variables (CFA analysis uses the ordered argument, appropriate for ordinal variables).

TABLE 3 Confirmatory factor analysis: daily and episodic domestic cognitive labor.

Category	Survey item	Factor 1: daily	Factor 2: episodic
Cleaning	Keeping track of when sheets and towels need to be washed	0.85	
	Cleaning out kids' clothes that no longer fit	0.88	
	Noticing when the house needs to be tidied	0.84	
Scheduling	Keeping track of the family calendar, such as kids' medical appointments	0.93	
	Planning a family event, like a birthday party	0.91	
	Remembering to schedule appointments, such as dentist appointments	0.92	
Childcare	Researching options for new items children need, like school supplies or shoes	0.90	
	Deciding on a child care provider (e.g., babysitter, daycare, camp)	0.84	
	Noticing when children's nails need to be cut	0.86	
Social relationships	Finding social options for children's enrichment (sports classes, clubs, etc)	0.84	
	Coordinating a playdate	0.83	
	Checking in with family and friends	0.84	
Food	Keeping track of which groceries need to be purchased	0.83	
	Deciding what meals to cook	0.82	
	Monitoring food for "sell-by" dates, or noticing when foods need to be thrown away	0.81	
Maintenance	Noticing when something like a dishwasher or faucet needs repair		0.75
	Booking a repair professional like a plumber or mechanic		0.75
	Remembering when items like a boiler or car need servicing		0.76
Finances	Researching options for financial products like bank accounts or insurance		0.89
	Deciding how to allocate money (such as paying off credit cards or increasing savings)		0.95
	Keeping track of household expenses		0.95
	Correlation coefficient between factors		0.32

Note: Cell entries are standardized factor loadings from CFA performed using the lavaan package in *R*, using the ordered argument for binary or ordinal variables. All loadings and coefficients are significant at the 0.01 level. $N = 1500$ (sample 2).

holds. Specifically, among single parents, a single factor explains 53% of the variation in the data, and diagnostic scree tests indicate that additional factors do not explain significantly more variance (see Appendix, Table A4). Unlike our previous analyses, for single parents, all of the survey items load highly on only the first dimension in the EFA (above 0.5), rather than some loading highly on a second dimension. This suggests that our main, multidimensional results are driven by dynamics within dual-parent households, where "doing gender" dynamics are evident. Single parents, by contrast, "undo gender" by doing it all, driven by the absence of another partner in the home.

Bivariate analysis

How are these two types of domestic cognitive labor divided within the family? Our expectation is that domestic cognitive labor is highly gendered, with mothers taking on more of the mental

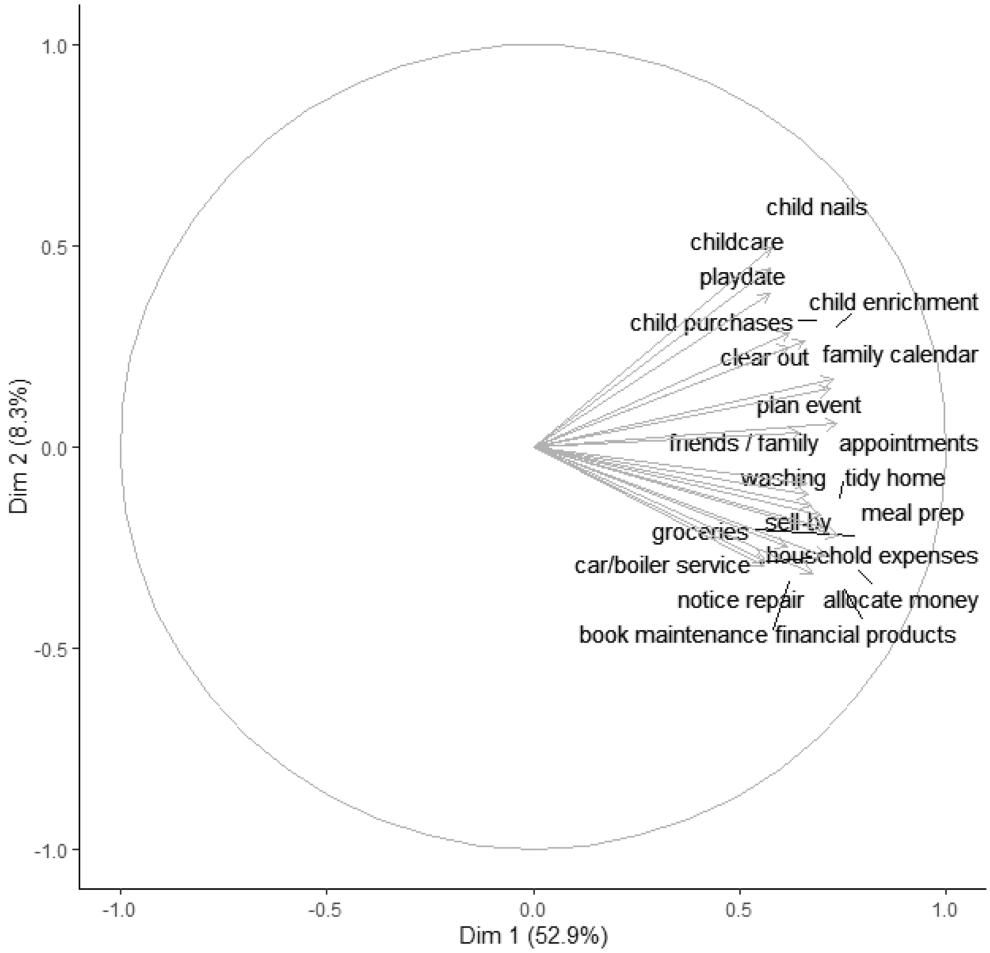

FIGURE 2 Exploratory factor analysis variables factor map, single parents. EFA was performed using a principal-component extraction method using the FactoMineR package in *R*. $N = 460$ (single parents only).

thinking work—particularly family well-being thinking work—compared to fathers (H1a). Following the results shown in Figure 1 and Table 3, for the subsequent analysis we divide domestic cognitive labor into its two components. Figure 3 shows the distribution of mean *Daily* domestic cognitive labor (including all items loading on the relevant Factor 1 of Table 3) and mean *Episodic* domestic cognitive labor (including all items loading on Factor 2 of Table 3) among mothers and fathers. In line with H1a, Figure 3 confirms that mothers hold a disproportionately large share of the *Daily* domestic cognitive labor (79%) compared to fathers (37%). By contrast, fathers report performing the bulk of the household *Episodic* domestic cognitive labor (65%) compared to mothers—although mothers still report doing a majority (53%) indicating both mothers and fathers report doing the bulk of *Episodic* care. These gender differences are both statistically significant at the 0.01 level (see Tables 4a and 4b). The *Episodic* domestic cognitive labor tasks also tend to be those characterized by the greatest agreement between mothers and fathers that they are "shared equally" (see Table 2). This suggests that these tasks are being done by both mothers and fathers, likely duplicated. By contrast, the *Daily* domestic cognitive labor tasks show more agreement among parents that these are being done largely by mothers.

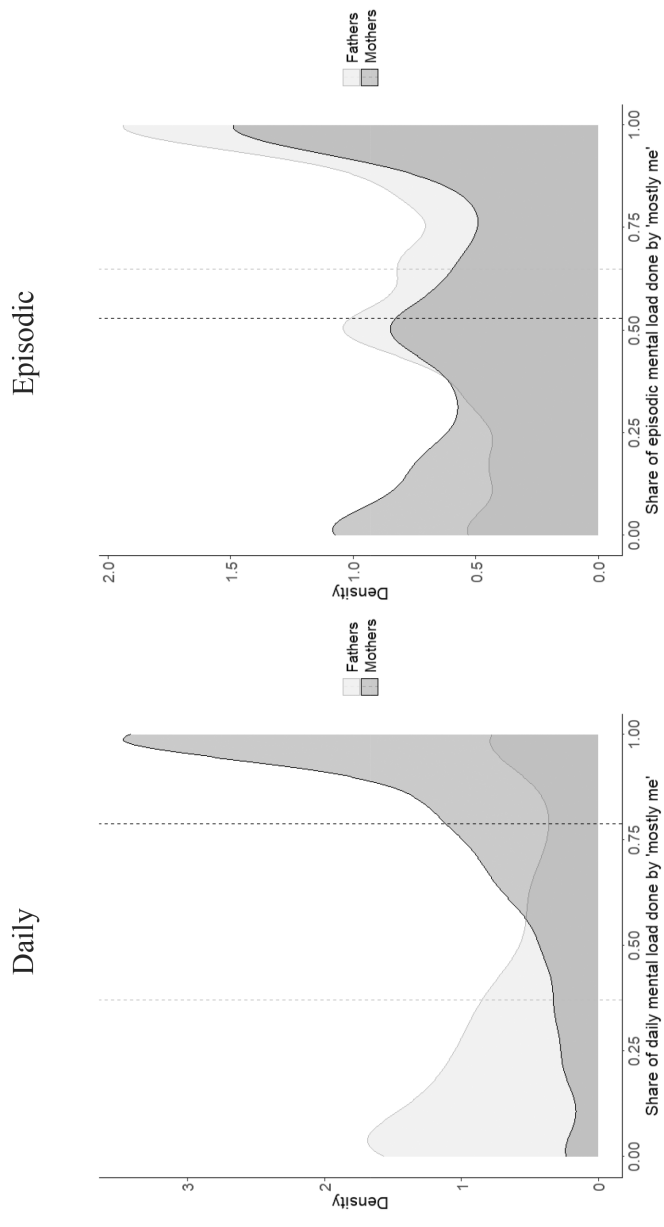

FIGURE 3 Gender differences in daily and episodic domestic cognitive labor among US parents. Vertical lines show means for mothers and fathers.

We next consider how our task-based measurement of domestic cognitive labor compares to self-reported estimates of primary responsibility for the total household domestic cognitive labor (H4). Tables 4a and 4b present the mean household, *Daily*, and *Episodic* domestic cognitive labor by gender and the results of associated t-tests of differences in means. H4 suggested that self-reported measures of domestic cognitive labor would return different results compared to our specific, task-based measures. Comparing the composite task-based measure, including all 21 survey items, to self-estimates, Table 4a confirms that these measures are indeed different. Specifically, in line with H4a, both mothers and fathers report doing a larger share of domestic cognitive labor when self-reporting in the aggregate compared to our item-based scale. Further, confirming H4b, for fathers this amounts to an increase of 16 percentage points, compared to mothers' 7 percentage points. A difference-in-differences test finds that the difference between men and women's overestimates is significant at conventional levels (difference-in-differences = −0.09, SE = 0.01). Thus, the total contribution is overestimated when compared to an aggregation of all 21 measures, and the gap is bigger for fathers than mothers.

Table 4b compares the self-reported aggregated domestic cognitive labor to daily (women-dominated) and episodic (men-dominated) components and shows the differences are not so large. Mothers' self-estimated share of 78% is very similar to the share of the *Daily* mental work they report mostly taking on (79%), and similarly fathers' self-estimated share of 61% is not far from the share of household *Episodic* mental work they report mostly carrying (65%). Paired *t*-tests find that the difference in these measures among mothers is not significant, while the difference among fathers, although relatively small (4 points) is significant at conventional levels.

By contrast, mothers' household *Episodic* mental work is much lower than their aggregated estimates (53 vs. 78, respectively; 25 point difference). And fathers' *Daily* mental work is significantly lower than their aggregated measures (37 vs. 61, respectively; 24-point difference). Overall, this comparison suggests that self-estimates are closer to measures of the types of domestic cognitive labor that men and women are *mostly responsible* for (*Daily* for women, *Episodic* for men), rather than the aggregate scale of the 21 items.

Tables 5a and 5b present these results for single parents. We document gender differences in domestic cognitive labor, but they are smaller among single parents than the overall sample. Consistent with the main effects, single mothers report doing more overall and daily domestic cognitive labor, and fathers report more of the episodic tasks. Counter to expectations (H4a and H4b), single parents tend to underestimate their cognitive domestic labor when comparing self-reported total labor to the single task index. Mothers and fathers are equally likely to

TABLE 4A Mean task-based versus self-reported estimates of domestic cognitive labor.

	Mothers	Fathers	Difference
Self-reported share total cognitive labor (1 item)	0.78	0.61	0.17***
All task-based (scale of 21 items)	0.71	0.45	0.26***
Difference (self-reported minus all task-based)	0.07***	0.16***	−0.09***

TABLE 4B Mean daily and episodic versus self-reported domestic cognitive labor.

Daily cognitive labor (subscale of 15 items)	0.79	0.37	0.42***
Difference (self-reported minus daily)	−0.01	0.24***	−0.25***
Episodic cognitive labor (subscale of 6 items)	0.53	0.65	−0.12***
Difference (self-reported minus episodic)	0.25***	−0.04***	0.29***

Note: Significance tests between men and women are calculated using Welch two-sample *t*-tests (one-sided). Significance tests among men and among women are calculated using paired *t*-tests.
*$p < 0.1$; **$p < 0.05$; ***$p < 0.01$.

TABLE 5A Mean task-based versus self-reported estimates of domestic cognitive labor, single parents.

	Mothers	Fathers	*Difference*
Self-reported share total cognitive labor (1 item)	0.84	0.78	0.05**
All task-based (scale of 21 items)	0.88	0.82	0.06**
Difference (self-reported minus all task-based)	−0.04***	−0.04*	−0.01

TABLE 5B Mean daily and episodic versus self-reported domestic cognitive labor, single parents.

Daily cognitive labor (subscale of 15 items)	0.90	0.80	0.10***
Difference (self-reported minus daily)	−0.06***	−0.02	−0.05
Episodic cognitive labor (subscale of 6 items)	0.84	0.88	−0.04*
Difference (self-reported minus episodic)	0.00	−0.09***	0.09**

Note: Subsample of single parents who report having no partner ($N = 460$; 147 fathers and 313 mothers). Significance tests between men and women are calculated using Welch two-sample *t*-tests (one-sided). Significance tests among men and among women are calculated using paired *t*-tests.

underestimate their contributions with the exception of self-reported total contribution compared to episodic domestic mental loads where the difference-in-difference score shows fathers underestimate their episodic contribution vis-à-vis the total measure but mothers do not.

Multivariate analysis

Our analysis so far indicates that mothers assume a larger share of the *Daily* domestic cognitive labor, and fathers report doing more *Episodic* domestic cognitive labor work than mothers. In this section of the analysis, we present multivariate models regressing domestic cognitive labor on gender and a series of individual controls. These models allow us to test whether gender remains strongly associated with domestic cognitive labor, as we hypothesize, even when controlling for a range of other known correlates of household work. We present the visualization of the coefficients in Figure 4; regression results are available for visual inspection in Supplemental Material Table A5. Our gender variable is coded 1 for woman and 0 for man, and so positive point estimates in Figure 4 indicate that the type of cognitive labor is more women-dominated, while negative estimates indicate the opposite, more men-dominated. Net of controls, the gender estimates remain significant at the .01 level across all models in the direction hypothesized, indicating mothers report larger shares of *Daily* and total domestic cognitive labor and fathers the *Episodic* ones (support for H1a).

Figure 4 also shows that the gender gaps in domestic cognitive labor measured here are typically smaller on the inclusion of controls. Table A4 reports that other variables—including self-estimated share of physical household labor, having a partner, the age of children, relative income in the household, sexual orientation, and ethnicity—are also significantly associated with mental work takeup in different ways. For example, self-estimated share of physical household labor positively predicts domestic cognitive labor across all measures, speaking to the strong link between cognitive and physical domains of household and care work (see also Aviv et al., 2024). Having a partner significantly reduces domestic cognitive labor across all measures, aligning with our EFA analysis of single parents and previous research on the particularly high loads that single and separated parents carry (Luthra & Haux, 2022). Interestingly, high income does not influence any measure of domestic cognitive labor at conventional levels of statistical significance, while ethnicity does matter: Black and Asian respondents tend to report less

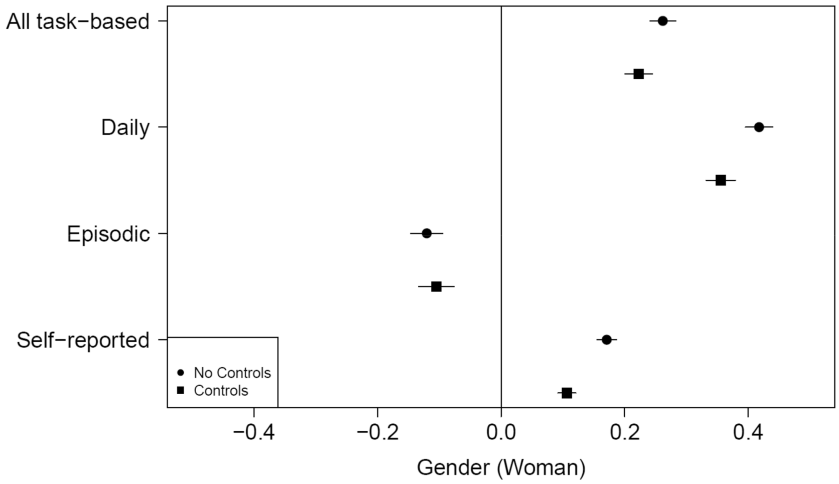

FIGURE 4 Coefficient plot, gender gaps in domestic cognitive labor among parents.

primary responsibility for domestic cognitive labor compared to White respondents.[6] Simply, gender remains a key predictor of the distribution of different types of domestic cognitive labor, net of a range of sociodemographic controls, lending credence to it functioning like another form of gender-display.

DISCUSSION

Domestic cognitive labor has a long history of scholarship as the invisible cognitive work that underpins family life. To date, emerging survey-based analysis has focused on quantifying domestic cognitive labor as an aggregated experience and estimating the gender differences. Qualitative research documents the process and domains through which domestic cognitive labor is performed (see Reich-Stiebert et al., 2023 for review). Across this literature, a clear and consistent pattern emerges—mothers perform the bulk of the domestic mental load (Kincaid, 2021; Daminger, 2019; Haupt & Gelbgiser, 2023; Petts & Carlson, 2023; Weeks, 2022). Yet, absent from this literature is a deeper understanding of how domestic cognitive labor may function as another way to display gender at home. Here, we test this theoretical approach, which is consistently applied to other forms of domestic work (Lee & Waite, 2005), to identify whether domestic cognitive labor forms a multi-dimensional measure that is distributed by gender. Further, we assess whether these gender displays, as per previous research on the physical domestic labor, are inconsistently viewed by mothers and fathers (see Lee & Waite, 2005; Yavorsky et al., 2015). This paper builds a deeper theoretical understanding of domestic cognitive labor as another form of "doing gender."

We apply a 21-item battery of mental load tasks to identify that domestic cognitive labor is multi-dimensional in its composition. Specifically, we find domestic cognitive labor is not a singular measure but rather forms two distinct gendered components for dual-parent households. Mothers and fathers in our survey report that mothers do more of the domestic cognitive labor associated with the cleaning, scheduling, childcare, social relationships, and food than do

[6]While a detailed analysis of the determinants of the gender gaps we report in Figure 4 is beyond the scope of this paper, our initial findings show suggest that certain variables could condition the relationship between gender and mental loads. That is, the gender gaps we report are likely to differ in important ways across individual- and household-level contexts.

fathers. These tasks are aimed at ensuring what we term the *Daily* well-being of family members. That mothers assume these domestic mental load tasks is consistent with research on the gender distribution of the physical domestic and childcare work (Bianchi et al., 2000; Craig, 2006; Geist & Ruppanner, 2018; Hook, 2010; Twiggs et al., 1999). Thus, mothers and fathers agree that mothers do more of domestic cognitive labor associated with the physical tasks mothers traditionally perform functioning as another means to "do-gender" at home. What is more, the gender distribution of this labor is robust net of a series of sociodemographic controls. Gender is a key attribute through which parents assume this work.

Fathers, by contrast, report doing a significantly larger share of domestic cognitive labor work tied to the maintenance and finance of the home. This work we term the *Episodic* domestic cognitive labor and is also consistent with theoretical understandings of gender display at home (West & Zimmerman, 1987). As observed in studies of physical household labor, men assume a larger share of the episodic, household maintenance tasks (Bianchi et al., 2000; Geist & Ruppanner, 2018; Hook, 2010; Twiggs et al., 1999). This category is also distributed more to fathers, net of a series of sociodemographic controls. Mothers also report holding a significant share of this work, and thus the gendered pattern is less stark compared to *Daily* domestic cognitive labor.

It is possible that mothers and fathers are both doing domestic cognitive labor of household infrastructure work (e.g., noticing, tracking, and reminding). For example, Table 2 shows that a majority of both mothers and fathers claim to be mostly responsible for keeping track of household expenses (61% for mothers and 57% for fathers) and noticing when an item such as a dishwasher or faucet needs repair (52% for mothers and 69% for fathers). Thus, this labor may be more duplicated within the family, with both mothers and fathers holding mental awareness of its monitoring even though fathers, on average, report greater primary responsibility and are more likely to complete these physical tasks. This finding is consistent with a range of mental load scholarship showing mothers are responsible for the household management, and allocate their mental loads accordingly (Alby et al., 2014; Christopher, 2021; Ciciolla & Luthar, 2019; Offer, 2014; Robertson et al., 2019; Treas & Tai, 2012; Winkler & Ireland, 2009; Zimmerman et al., 2002). As we note previously, this indicates that mothers are also functioning in ways consistent with gender-display as household managers, here holding onto a larger share of the *Episodic* domestic cognitive labor as well. These higher demands across categories may link to mothers' experiences of stress, strain, and burnout which, in addition to collecting couple-level data, points to clear direction for future research. This distinction is important because we find the multidimensional domestic cognitive labor index is not evident for single parents. Rather, mothers and fathers alike hold aggregated domestic cognitive labor, with these 21 tasks forming a single index. Thus, fathers are "undoing gender" in families where a second parent is absent.

We also identify that, like other forms of unpaid labor, the way the questions are measured produces divergent outcomes (Lee & Waite, 2005; Yavorsky et al., 2015). When comparing a self-reported measure of our respondents' total contributions to domestic cognitive labor to tasks within each category, we find that mothers and fathers each estimate their total contribution based on their gendered contributions to the specific tasks in their primary dimension of domestic cognitive work. That is, fathers' aggregate self-estimates align closely with the share of *Episodic* domestic cognitive labor they do. By contrast, mothers' aggregate self-estimates are nearly identical to the share of *Daily* domestic cognitive labor they report doing. Each sees the families' total domestic mental work through a prism of their primary tasks, but mothers report doing more of all the tasks. This too can be understood through a gender-display perspective in that the activities performed by one partner may not be seen by the other; simply, actions of gender display may be unnoticed (West & Zimmerman, 1987). Unlike physical forms of domestic labor (e.g., washing dishes or playing with children) that are visible, mothers and fathers do cognitive domestic labor internally so they often cannot "see" each other's labor. This suggests

that the invisibility of cognitive domestic labor means it is often missed by the other partner which may impact its validity for reasons outlined below.

This presents a methodological challenge for family scholars. To determine how to accurately measure domestic cognitive labor, especially its distribution between couples, is difficult. Time use surveys indicate that core chores like cleaning, food, and childcare absorb more daily time than the episodic tasks like maintenance and finance (Bianchi et al., 2000). Similarly, the cognitive space and energy needed to carry the *Daily* domestic cognitive labor might be more intensive than is required for the more *Episodic* labor. Thus, fathers may be overestimating their total contributions vis-à-vis mothers. The challenge, however, with domestic cognitive labor is that it lacks a concrete time dimension—mental loads can be carried in seconds, minutes, or hours—and are done internally and thus totally invisible. Thus, it does not sit within traditional bounds of time (Dean et al., 2022) and so it is possible that mothers and fathers are inaccurate in estimating the total family mental load and their contribution because domestic cognitive labor is invisible and time unbounding. And, as outlined below, these may be equally weighty.

We assume, based on previous research, that mothers carrying larger shares of the *Daily* cognitive labor that are more frequent and routine demands will be particularly detrimental to a range of outcomes (e.g., to health and employment). However, fathers' cognitive labor spent on the more *Episodic* household tasks—especially finances—may be equally heavy especially when families are facing financial insecurity. Further, these patterns may be classed given that mothers often assume the financial reigns during times of economic insecurity in less affluent families, but fathers do in more affluent ones (Cooper, 2014). Thus, unlike other forms of domestic labor—such as childcare and housework—which can be captured in minutes or shares, domestic cognitive labor can be duplicated, omnipresent, and heavy even if only isolated to a handful of cognitively-taxing tasks (e.g., control of the finances when there is insufficient money) with important between-group differences. This warrants additional research. This can also help inform how domestic cognitive labor is discussed in clinical practice as it may intensify personal distress as well as marital conflict and discord. It requires a different conceptualization to other forms of unpaid domestic work, and this necessitates a range of additional data collection. And it indicates that the traditional theoretical understandings of domestic labor—those applying time-based approaches—are inadequate. Here, we show that theories of gender-display are useful (Goffman, 1959; West & Zimmerman, 1987) but additional theorization is necessary.

So, where do we go from here? This research provides a clear theoretical contribution to understand domestic cognitive labor—it functions similar to other domestic labor, as a way to "do-gender". And it provides some insights into developing a quantitative survey measure of domestic cognitive labor. We show that domestic cognitive labor is distributed by task across gender. Others interested in capturing this experience through surveys should be mindful of this feature. Yet, our study also has several limitations. First, we study mental load among individual parents in the United States at a single point in time. Thus, we do not capture changes in parents' domestic cognitive labor over time which may be critical to understanding the ebb and flow of labor. Second, our measures relate to cognitive household labor but do not ask about the full range of cognitive mental load work identified (Daminger, 2019) or about the emotional dimension of mental load work (Dean et al., 2022). We may find the gender distribution of this labor looks different to our established measures. Finally, our analysis does not explicitly theorize or test how the different experiences of subgroups of men and women might influence the distribution of mental load responsibility. We do include a series of sociodemographic controls shown to structure housework. But these measures may have a distinct impact on domestic cognitive labor which requires clearer theorization and more detailed analyses. These limitations provide clear directions for future research. Future studies can make meaningful progress by aiming to understand the full scope of domestic cognitive labor, its distribution within couples,

over time, and across family structures and intersectional identities (not only gender but race, class, sexual orientation, religion, and so on), and its weight on other dimensions of family life.

Further, future research should be linking these empirical measures to subjective experiences, like work-family strain, mental health, and experiences of burn-out. This could help researchers consider how the lived experiences of different categories of domestic cognitive labor, which are unlikely to be equally intensive, could inform weighted measures of cognitive labor. Data collection from couples to uncover the interpersonal dynamics would also be useful. The gender distribution of domestic cognitive labor also underscores why interpersonal communication within couples can be fraught, providing insights for clinicians, practitioners, and counselors to better support clients to discuss domestic cognitive labor that, for many, is invisible. Of course, all of this should be informed by deep qualitative research, indicating the importance of cross-method conversations about how domestic cognitive labor is performed and the most effective means of measurement. This is all a call for additional research.

Ultimately, our research provides some clear directions forward—notably that domestic cognitive labor forms a multi-dimensional index for dual-partnered parents, is distributed by gender, and is prone to the same measurement issues of misestimation based on question wording as previous research. We demonstrate that "doing gender" theories are a good place to start to build a deeper understanding of domestic cognitive labor. Collectively, these lessons are critical for future research.

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$^{*}p < 0.1$; $^{**}p < 0.05$; $^{***}p < 0.01$.

SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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