



Exploring Design Spaces to Facilitate Household Collaboration for Cohabiting Couples

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Abstract

Household collaboration among cohabiting couples presents unique challenges due to the intimate nature of the relationships and the lack of external rewards. Current efficiency-oriented technologies neglect these distinct dynamics. Our study aims to examine the real-world context and underlying needs of couples in their collaborative homemaking. We conducted a 10-day empirical investigation involving six Korean couples, supplemented by a probe approach to facilitate reflection on their current homemaking practices. We identified the requirement for ideal household collaboration as a 'shared ritual for celebratory interaction' and pinpointed the challenges in achieving this goal. We propose three design opportunities for domestic technology to address this gap: strengthening the meaning of housework around family values, supporting recognition of the partner's efforts through visualization, and initiating negotiation through defamiliarization. These insights extend the design considerations for domestic technologies, advocating for a broader understanding of the values contributing to satisfactory homemaking activities within the household.

CCS Concepts

• Human-centered computing → Empirical studies in HCI.

Keywords

Collaboration, Home, Diary Study

ACM Reference Format:

Gahyeon Bae, Seo Kyoung Park, Taewan Kim, and Hwajung Hong. 2025. Exploring Design Spaces to Facilitate Household Collaboration for Cohabiting Couples. In *CHI Conference on Human Factors in Computing Systems (CHI '25)*, April 26–May 01, 2025, Yokohama, Japan. ACM, New York, NY, USA, 16 pages. <https://doi.org/10.1145/3706598.3713383>

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ACM ISBN 979-8-4007-1394-1/25/04

<https://doi.org/10.1145/3706598.3713383>

1 Introduction

Navigating the complexity of household chores is more than just a domestic necessity—it is a cornerstone of family well-being. From tidying up to meal planning, these tasks permeate every aspect of family life, shaping not only the household's collective harmony but also the personal satisfaction of individual members [11, 19, 70]. As the primary agents of household tasks among family members, couples manage the household responsibilities together, dividing labor and communicating throughout the process [6, 16, 73, 77]. Despite the ubiquity and importance of household chores, ensuring that both partners are satisfied with their household collaboration remains a challenging and unresolved issue even today [15, 34, 53, 69].

We have seen various domestic technology services attempting to address this issue. Noteworthy among them are services focused on efficiently managing domestic labor, similar to approaches used in workplace collaboration tools, such as those for the equitable distribution of household tasks [2] and collaborative scheduling of chores [3–5]. Some services offer systematic rewards to incentivize family members' participation in domestic tasks [1, 67, 78]. However, solutions not carefully tailored to the specific context of household life may struggle to address the issue fundamentally. They could unintentionally exacerbate collaboration problems by placing additional cognitive household labor on one partner through these services [75].

Several distinctive characteristics that deepen the complexities of household collaboration highlight the need for a more nuanced approach. First, the scope of household chores is broad, encompassing not only repetitive physical tasks such as cleaning and meal preparation but also cognitively and emotionally demanding labor, like decision-making [24, 41]. Second, the unique dynamics of cohabiting couples significantly influence emotional interactions [42]. Additionally, individual internal and external factors specific to each couple—such as their availability, career status, and life course influences—affect how they collaborate on household chores [52, 58, 76, 79, 80].

Given that household collaboration may not share the same goals, context, or challenges as workplace collaboration, domestic technology needs to adopt a unique approach to support couples' collaboration. Therefore, further research is required to explore

and develop these distinct approaches. In this study, we explore the familial dynamics and contextual nuances shaping couples' household activities. To accomplish these goals, we devised a mixed-method probe kit with playful intervening activities and engaged in probe studies with six couples possessing diverse characteristics. Over a 10-day period, each couple collaboratively formulated new chore rules and activities through the given probe kit and recorded them in the diary. Subsequently, participants characterized their household context and explored underlying needs and opportunities to improve collaboration practices. Through pre- and post-interviews and diary analysis, we gained insights into household collaboration's complexities and the couples' anticipated requirements elicited by the probe studies. Upon analyzing the findings of our study, we identified that the challenge couples face in the household collaboration process stems from the individualized routine nature of household tasks. In addition, we defined the ideal form of household collaboration, which overcomes these challenges, as a "shared ritual for celebratory interaction." We propose three technological intervention points to support this transition in collaboration: 1) strengthening the meaning of housework around family values, 2) supporting recognition of each partner's efforts through visualization, and 3) initiating negotiation through defamiliarization.

2 Related Work

2.1 The Complex Dynamics of Household Collaboration

Housework is the unpaid work that a family or other members perform to maintain a family and home [70]. The types of household tasks encompassed by a broad definition are complex. In addition to the physical labor that typically comes to mind when thinking of housework, there is also invisible cognitive and emotional labor, which entails anticipating needs, identifying options for fulfilling them, making decisions, and monitoring progress. Considering these factors, household tasks become even more diverse [24, 25, 41].

Research on how couples collaborate on complex household chores has been a critical focus, particularly in understanding the division of labor, communication, and the unique dynamics of couple collaboration. Studies show that couples typically divide tasks based on preferences and proficiency [16]. Household management responsibilities are often distributed through mutual delegation and task requests [6, 73]. Key characteristics of couple collaboration include a lack of clear goals, ambiguous task organization, and deeper motivation driven by shared understanding and knowledge [42]. Further research highlights the emotional impact of household collaboration on life satisfaction and relationships [11, 19].

Couple collaboration on household tasks is shaped by various internal and external factors. Studies have examined how employment status (worker vs. retiree) and life course influences, such as age, gender, and marital duration, affect the division and execution of household tasks [52, 76, 79, 80]. Additionally, research highlights how spouses' relative power, availability, work patterns, and housing arrangements influence the coordination and distribution of household labor [52, 58].

Establishing a balanced household collaboration remains a challenge, often due to one partner (traditionally the woman) taking on the majority of tasks or feeling a greater sense of responsibility [9, 47, 55, 57, 64, 65]. While some couples reassessed their roles during the COVID-19 pandemic, studies [15, 34, 53, 69] reveal that the burden of unequal responsibilities persisted, highlighting the complexity of this issue.

2.2 Gendered Norms in Housework

Household collaboration remains closely tied to evolving gender issues, as housework has traditionally been seen as a woman's responsibility [36]. The transmission of gendered norms in housework is explained both through the internalization of gender identity during socialization from a young age [22, 23] and the tendency to align behavior with societal expectations of gender roles in housework [10, 38, 63]. Recent studies have also examined how the larger proportion of housework performed by mothers during childhood influences gender inequality in their children's future families [37].

Like in many other countries, housework has traditionally been regarded as primarily a woman's responsibility, often perceived as less valued compared to men's work [74]. This perception has been influenced by traditional Confucian beliefs, which emphasize the role of women in maintaining the household and performing domestic duties. For the early industrialization generation (from the 1960s to the early 1980s), who were shaped by Confucian sociocultural norms [51], these traditional divisions of labor often remain evident [17]. However, cultural ideologies are not static. With shifts toward valuing individual achievement and greater gender equality [51], the democratization generation has increasingly moved toward more egalitarian approaches to dividing housework [56, 72]. These trends highlight the dynamic interplay between cultural traditions and evolving societal norms.

While traditional norms have shaped a rigid division of household labor, the weakening influence of these norms in South Korean society provides an opportunity to revisit household collaboration. Instead of adhering to standardized expectations, there is a growing need to support more customized approaches to housework that align with the unique dynamics, preferences, and circumstances of individual households and their members. In this context, we aimed to observe in detail how couples from various generations and marital forms engage in household collaboration during this transitional period.

2.3 Technological Approaches for Supporting Household Collaboration

Various services have been introduced to facilitate household collaboration, each employing unique strategies to enhance task engagement. Gamification is common, with platforms like LaborOfLove (Fig.1a) offering rewards for completed tasks and progress tracking [67], and Nipto (Fig.1b) fostering friendly competitions among household members [1]. 'Unfilth Your Habitat' uses strong language and guilt-based reminders to prompt chore completion [78]. Task management tools like Fairshare ensure equitable distribution [2], while apps such as Chorebuster, Maple, and Tody focus on

collaborative scheduling [3–5]. Additionally, family calendar systems are designed to learn and adapt to family routines, improving communication and information sharing [14, 27, 60].

However, these services often adopt efficiency-focused approaches similar to workplace settings, overlooking the complexities of household collaboration among couples. Some even unintentionally increase the burden of household chores [75]. In situations where one partner already shoulders more responsibility [19, 47], the added cognitive load from these tools can exacerbate the imbalance, underscoring how current solutions fail to fully address the unique dynamics of household collaboration. This reflects a broader pattern seen with household technologies, which, rather than alleviating the burden of domestic labor, have often introduced new forms of work while perpetuating the traditional gendered division of labor within the home [20].

There is a growing body of research in the domestic technology field that has identified household chores as a prevalent theme, with active household contribution recognized as a critical area for technological intervention [27, 49]. However, while domestic technology research acknowledges that domestic spaces are complex ecosystems where families engage in a variety of activities and require technologies sensitive to intricate family dynamics [26, 40, 43, 54], it remains challenging to conclude that the complex context of household collaboration has been fully reflected in this field. This underscores the need for further research in the domestic technology field, particularly to determine systematic interventions tailored to the unique context of household collaboration. To address this gap, our study explored couples' unique needs and expectations for technological support in household collaboration in a more in-depth manner.

2.4 The Rise of Intelligent Technologies in the Home

Recent domestic technology has evolved beyond merely providing home appliances for routine chores to include intelligent devices and software tailored to individual family needs [49]. As advanced technologies such as AI/ML, big data analytics, cloud computing, and IoT are being integrated into domestic technology, the potential of these technologies in research has grown. Particularly, the advancement of AI has evolved from task automation for efficient strategies [48] to roles traditionally seen as uniquely human, such as empathy, compassion, and fostering human connections [12, 66]. This expansion has led to the use of AI in cognitive, emotional, and ethical labor across various social, civil, personal, and professional contexts [34]. The flexible capabilities of these emerging technologies are increasingly recognized for their potential to improve complex collaboration characterized by ambiguous problems and goals, varying individual values, and coordination across interconnected systems in highly variable environments [44]. These points suggest that technological support for household collaboration—a form of complex collaboration within the domestic sphere—should reflect these technological advancements.

Moreover, intelligent technologies for families not only open up new design possibilities but also raise important considerations. A study of family-imitating group accounts from Google and Amazon

argues that these systems integrate domestic life into platform capitalism, reducing user autonomy while expanding data collection and surveillance for more efficient household management [39]. Another study on digital voice assistants like Google Home, Alexa, and Siri critiques how these technologies use feminine characteristics to exert paternalistic control while appearing as nurturing figures. This study emphasizes that the idealized notion of smart wives fails to capture the complex and varied ways these devices are integrated into or rejected by different households [68]. In this way, one of the biggest concerns is that highly advanced domestic technology may ignore each family's unique culture, instead promoting generalized lifestyles and values or reinforcing harmful stereotypes. The risk that these technologies might impose certain lifestyles on families highlights the importance of designing solutions that carefully consider users' needs. Therefore, in designing technological support for household collaboration, we conducted a study using the probe study method to gain insights into couples' expectations and preferences regarding such solutions.

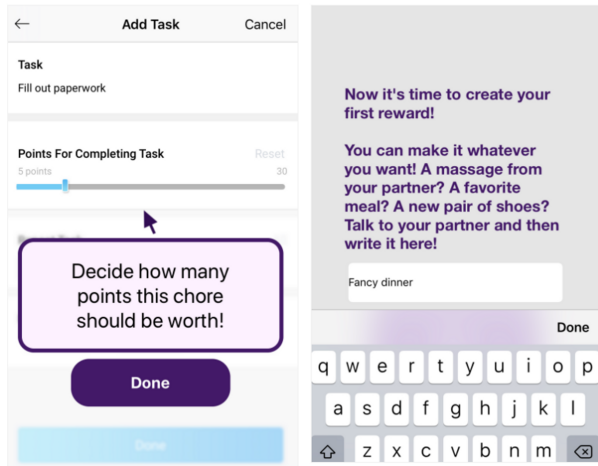
3 Method

In order to discover hidden expectations for socio-technological support in household collaboration, we aimed to observe couples' practice of housework and the interactions among them. In monotonous and routinized household settings, we needed to support couples in reflecting and uncovering hidden aspects of household collaboration. Therefore, we adopt the cultural probe method, renowned for its ability to uncover subtle insights about individuals in groups unfamiliar to the designers [35]. Next, we designed a mixed-method probe kit centered around diaries. Our study was divided into three phases: pre-interview, probe activities, and post-interview. We recruited six South Korean couples and conducted 10-day probe activities using the probe kit. (Fig.2) Since the study included information about the private lives of couples, we ensured strict anonymization of participant data throughout the research process. This study was approved by the Institutional Review Board (approval numbers omitted for anonymization)

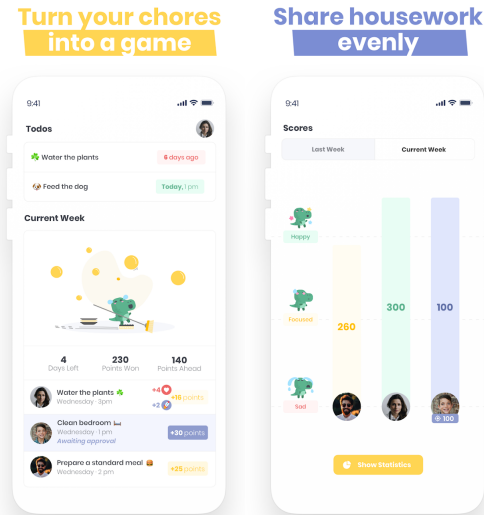
3.1 Study Design

3.1.1 The Design of Probe Kit. Strategic data collection tools are essential to capture the diverse activities and interactions occurring in domestic environments. For example, previous studies used a flannel board, a felt-covered board featuring movable fabric pieces representing household spaces, individuals, and activities, as an ethnography tool to reenact daily home routines and facilitate conversations about them to ideate technology in domestic settings [59]. Another example involved using a felt board to facilitate interaction and inspire research on domestic appliances [65]. Cultural probes have been widely used to promote a rich ethnographic understanding, employing various methods such as postcards, cameras, and maps to document and contextualize activities. [21, 35].

In our research, to gain a deeper understanding of household collaboration, we developed a probe kit consisting of a diary, a reward sticker board, and joker cards (Fig.3). First, we planned the *diary* as a medium for participants to reflect on and document their domestic tasks, related events, and thoughts, referencing the previous studies on how diaries have effectively investigated family



(a) Labor of Love: an application for sharing household to-do lists and earning a reward



(b) Nipto: a gamified application that allows competition around chores

Figure 1: Existing applications that assist household collaboration

routines, rhythms, and practical issues [21, 73]. Each partner was required to complete the diary daily, noting the date, mood, and tasks undertaken by both individuals, including a dedicated section for photographs captured during chores. To encourage participants to engage with interest, we provided supplemental materials such as colored pencils, stickers, and an instant camera.

Referring to previous probe studies that provide activities that elicit free and rich insights from participants [45, 46, 65], we designed the Reward Sticker and Joker Card activities to bring a sense of novelty to the repetitive daily cycle of housework.

First, the *Reward Sticker Board* was crafted based on the ‘do/do not’ guidelines established in the pre-probe stage. This board enabled couples to assess each other’s domestic chores daily using stickers. Each partner could award between 0 to 5 stickers daily to the other, based on their own judgment. Once a partner amasses a specified number of stickers throughout the activity period, a reward will be granted based on criteria that the couple has pre-determined together.

Second, the *Joker Card* functioned as a mission card that participants could deploy when desiring a change or a novel experience in their domestic routine. During the pre-probe stage, couples collaboratively determined the missions for these cards. Throughout the probe study, each couple was required to utilize all five cards, which could be claimed and used on a first-come, first-served basis. A cap of three cards per person was established to ensure balanced participation and prevent any one individual from dominating the use of these cards.

3.1.2 Study Process.

Preliminary questionnaire. Before the pre-interviews, each participant completed a *preliminary questionnaire* about daily routines,

preferences, challenges, and communication methods related to chore distribution. In the questionnaire responses, we identified instances where partners provided distinctly different answers to the same questions, as well as responses that distinguished them from other couples. The responses to these questions offered valuable insights into the unique dynamics of each household, including patterns of task allocation, common sources of friction, and collaborative strategies. The characteristics specific to each family informed the drafting of the pre-interview questions.

In the *pre-interviews*, we first explore how couples manage and perceive their household collaboration comprehensively for 20 minutes. After that, we took another 20-minute segment with common questions about what participants wanted to improve in their current household routines and how they communicated. After gathering insights into each couple’s household life, we dedicated 40 minutes to helping couples set their activity rules for the probe activities. In our study, the ‘activity rules’ refer to structured agreements that the couples collaboratively designed to customize their participation in the study. For example, they decided when to give and receive reward stickers, defined the conditions for achieving specific goals, and agreed on how to reward each other after collecting a certain number of stickers. These agreements were recorded on the reward sticker board. Additionally, couples discussed new activities they wanted to attempt during the probe and documented these on ‘Joker Cards.’ This process enabled couples to express their expectations regarding household collaboration while fostering engagement in the probe activities. To aid understanding, examples of the reward sticker and Joker Card activities were provided (Fig.4). We maintained a hands-off approach, allowing couples to negotiate and agree on their rules independently. Using the affinity diagram

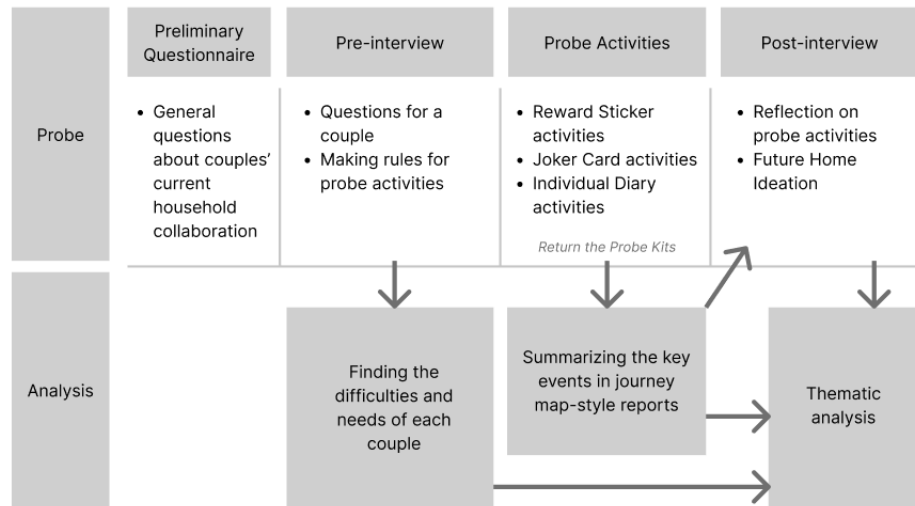


Figure 2: Process of the study: The study consisted of pre-interviews to discuss household routines and set probe activity rules, followed by 10 days of collaborative tasks documented with stickers and joker cards, and concluded with post-interviews and a thematic analysis of the couples' experiences.



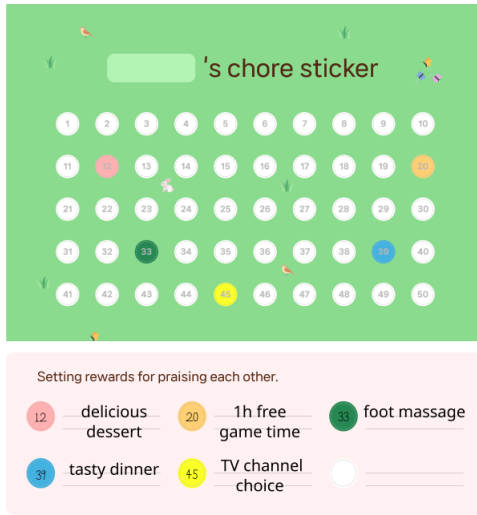
Figure 3: The probe kit, consisting of a diary, reward sticker boards, joker cards, an instant camera, and colored pens, was designed to engage couples in documenting and reflecting on their household tasks and collaboration throughout the study.

method, we analyzed the recorded pre-interview dialogs and the couples' activity rules.

Probe Activities. In the *probe activities*, we encouraged couples to observe and reflect on their household task patterns using the probe kit. We provided the probe kit to the couples on the day of the pre-interview and asked them to return it after completing the 10-day activities at home. Couples carried out the collaborative probe activities according to the rules set during the pre-interview. After completing a task, they placed stickers and attached joker

cards to the diary to document their activities individually. In addition, they used the diary to record both their own and their partner's housework completion and their thoughts and feelings about housework-related events, using the materials provided in the kit in their unique way. We informed the couples that during the post-interview, they would share and discuss parts of their diaries with each other.

Post-interview. After the probe kits were returned from the participants, we took about a week to briefly analyze the data collected



(a) The Reward Sticker Board allows couples to assess and reward each other's daily household contributions with stickers, where accumulating a predetermined number of stickers results in a reward chosen based on the couple's mutual agreement during the pre-probe stage.



(b) The Joker Card, shown here, allowed couples to introduce novel or playful tasks, such as switching chores or mimicking each other, into their household routines, with missions collaboratively determined during the pre-probe stage and limited to three cards per person to ensure balanced participation.

Figure 4: Examples of the Reward Sticker Board and Joker Card provided to couples during the chore rule-setting process.

from their probe activities and made journey map-style summary reports. In the *post-interview*, we first set aside 15 minutes for a joint reflection using the summary report. Also, we asked questions about the actual implementation of the reward sticker and joker card activities, any rule modifications, and which activities were most beneficial for their households. After that, in a 25-minute session, couples discussed their recurring patterns and unique attributes and values they observed from the probe activities. Also, we encouraged couples to ideate technological support based on each couple's mutual shared values and goals. After finishing all the interviews, we conducted a thematic analysis based on the pre-interview analysis, probe activity records, and post-interview contents. Two co-authors carried out all analyses.

3.2 Recruitment and Participants

To capture diverse experiences and perspectives on household collaboration among couples, our study method required realistic considerations during participant recruitment. Participants needed to share intimate aspects of their family life with researchers and commit to a demanding process, including pre-interviews and post-interviews and a 10-day probe activity. Additionally, researchers had to manage the in-depth qualitative data obtained from families responsibly. Given these constraints, we prioritized participants who showed both interest and the ability to commit to the study's duration. To recruit participants, we utilized both online community forums and offline bulletin board advertisements. As a result, the study included South Korean couples from various demographic backgrounds, considering factors such as age, occupation, marital status, duration of cohabitation, and the presence and age of children. (Table.1).

This smaller sample size allowed for detailed exploration of household dynamics and ensured high-quality engagement during the 10-day probe activity. All couples completed the probe activities, but C1 withdrew from the post-interview due to personal reasons. Each participating couple received a compensation of 100,000 KRW.

4 findings

Our study explored the context and dynamics of the family collaboration of participating couples. Through the preliminary questionnaire and the pre-interview, we uncovered the specific household practices and task management dynamics of each couple. (Table.2). We also gained insight into the core values couples prioritize and the contexts where they face significant challenges. We identified previously overlooked needs in their daily routines by analyzing their reflections and perspective shifts. First, we outline the unique characteristics of household collaboration and explain the needs and opportunities revealed by the probe study.

4.1 Distinctive Characteristics of Household Collaboration

This section explores the findings related to the unique characteristics of household collaboration. First, we show that actions that acknowledge the partner as a valuable counterpart precede the performance of household chores. Next, we talk about the challenges couples face in bridging the gap between their differing standards for household chores. Furthermore, we describe how the structure where one party takes on the responsibility for the sake of efficiency can create discomfort for both sides.

Table 1: Participants' demographics and their couple information

Couple ID	Personal ID	Sex	Age	Occupation	Marital Status	Cohabitation Period	Children	Type of Residence
C1	P1	M	41	Office Worker	Married	12y	2 (11y, 3m)	Apartment
	P2	F	39	Homemaker				
C2	P3	M	50	Office Worker	Married	21y	3 (22y, 18y, 16y)	Apartment
	P4	F	50	Office Worker				
C3	P5	M	35	Public officer	Married	1y	Pregnant	Apartment
	P6	F	33	Public officer				
C4	P7	M	27	Office Worker	Unmarried	2y	X	Multiplex housing
	P8	F	29	Freelancer				
C5	P9	M	27	Student	Married	4m	X	Apartment
	P10	F	27	Student				
C6	P11	M	29	Office Worker	Getting married	3y	X	Multiplex housing
	P12	F	30	Instructor				

4.1.1 Partnership as a Prerequisite of Household Collaboration. Our study observed how emotional and relational aspects are connected to housework. During the pre-interview, C1 and C3 mentioned that when their partner acknowledged their efforts in housework and showed emotional respect. P2 shared that she was deeply touched when P1 understood her hard work for the household and provided even small but helpful actions in response.

“When I am taking care of the babies, I get thirsty a lot, especially after having given birth. So when my husband goes, ‘Here, have this,’ and hands me a drink, I am really grateful.” (P2, pre-interview)

In the probe activity stage, we also confirmed the importance of not only performing household chores in person but also engaging in actions that respect the partner and strengthen the relationship. Most participants preferred collaborative probe activities that strengthened the couple's rapport, such as “spending leisure time together,” “giving positive feedback,” or “expressing affection” rather than doing household chores instead or offering material rewards. P11 commented that reward activities like “doing the chores on behalf of the partner” or “cooking a meal” made him feel demotivated, as he did not perform household tasks with the expectation of a reward. Also, P9 mentioned that he preferred engaging in general activities, like “giving compliments all day,” which can be applied to various situations, rather than one-off tasks like “cleaning up for the other.”

We also observed cases where positive feedback from a partner acted as a motivation for household activities. P1 recorded in his diary that, despite normally disliking dishwashing, receiving recognition and praise from his partner motivated him to put more effort into the task. Similarly, P2 noted in her diary that although she found the recurring maintenance task of changing the air purifier filter bothersome, her partner's praise and encouragement made her feel more positive about it.

These findings illustrate that, in household collaboration—where tangible rewards for performing chores are often lacking—activities that elevate Partnership, such as emotionally considering partners and offering positive feedback, are crucial prerequisites for effective household collaboration.

4.1.2 Gaps in Household Chore Standards Between Couples. From the preliminary questionnaire and pre-interview, we identified differences in standards and chore execution styles within couples. First, differences in standards include perceptions of cleanliness (C4, C5, C6), frugality (C2), and attitudes and perspectives on household chores (C3, C6), all of which were influenced by their lives before cohabitation. We found that these differences in standards influenced their household routines in distinct ways. Examples include the timing and method of taking out the trash (C4), washing dishes (C2), styles of cleaning the bathroom (C5), organizing bedding (C6), and importance given to turning off lights and unplugging appliances (C2, C3). These differences highlighted the existence of distinct household chore styles between couples.

Such differences between couples led to conflict. For example, in the case of C4's trash disposal situation, P8 wanted her husband to frequently take out the trash bags she tied up and left out on his way to work. However, P7, accustomed to the trash disposal patterns from before their cohabitation, mentioned that he did not realize at the time that his wife leaving the trash outside meant she expected him to take it out.

“(Before living together) my place had a balcony where we'd store all the recycling and trash to take out at once. I think it's because our living patterns were different. (My partner) lived in a studio apartment for a long time while I lived in a bigger house with my parents. In a studio, you have to take out the trash right away, so probably that's why...” (P7, pre-interview)

Similarly, in the post-interview, P4 reflected on a past moment, recalled through the study, when she was taken aback by the differing concepts of cleanliness between herself and P3. One day, she had expected a clean room after P3 told her he had tidied up for her, knowing how exhausted she was that day. However, while he had washed the curtains and bedding, vacuumed, and completed other tasks, he had not put the items back in their proper places, leaving her confused.

“So, it was very clean, but... too clean. (To him) the concept of cleanliness wasn't the same as mine. For me, it means everything is in its place, but for him, cleaning

Table 2: Established Housework Routines of Participant Couples: Analysis of Questionnaire and Pre-Interview Responses

P#	Responses to the preliminary questionnaire on household task performance	Task management routine & Characteristics
P1	<ul style="list-style-type: none"> • 3+ times per week: Doing the dishes • Once a week: House cleaning, sorting recyclables 	<ul style="list-style-type: none"> • The birth of the first child establishes the current distribution of household tasks and sets the standards. • Household tasks are not collaboratively negotiated; instead, P2, as a full-time homemaker, primarily manages and performs the tasks, delegating or requesting specific tasks from P1 as needed.
P2	<ul style="list-style-type: none"> • Daily: Childcare, laundry, doing the dishes, meal preparation, house cleaning, and tidying up 	
P3	<ul style="list-style-type: none"> • Once a week: Vacuuming, cleaning children's rooms • Once a month: Car wash 	<ul style="list-style-type: none"> • P3 is responsible for financial expenses, while P4 fully handles matters related to the children. • Due to their long cohabitation, their roles and tasks are clearly divided and routinized, with minimal involvement in each other's areas. • They try to perform household tasks as efficiently as possible by utilizing various appliances and technologies.
P4	<ul style="list-style-type: none"> • Daily: Meal preparation, house cleaning, doing the dishes, laundry, banchan dish preparation • Once a week: Ironing 	
P5	<ul style="list-style-type: none"> • Daily: Doing the dishes • 3 times a week: Recycling and disposing of food waste • 1-2 times a week: Laundry, cleaning the bathroom 	<ul style="list-style-type: none"> • Despite being a working couple, P6 takes the lead in managing household tasks, as P5 commutes long distances daily. • P6 sets the standards, and decides on how tasks should be performed, requesting specific actions from P5 as needed.
P6	<ul style="list-style-type: none"> • Daily: Meal preparation (including grocery shopping, ingredient prepping, and cooking), bed-making, doing the dishes • 1-2 times a week: Laundry, organizing household items 	
P7	<ul style="list-style-type: none"> • 2-3 times a week: Laundry, cleaning the sink • 2 times a week: House cleaning 	<ul style="list-style-type: none"> • Since their days off do not align, each takes the lead in handling household tasks that they consider important and sensitive during their time at home. • They mentioned that they have yet to establish detailed agreements and standards for household tasks, so they communicate about them on a case-by-case basis
P8	<ul style="list-style-type: none"> • Daily: Meal preparation • 2 times a week: Laundry, house cleaning 	
P9	<ul style="list-style-type: none"> • 3-4 times a week: Doing the dishes • 2 times a week: Laundry (scheduling, washing, drying) 	<ul style="list-style-type: none"> • They flexibly distribute household tasks based on the situation, with each person focusing more on the tasks they consider important or excel at. • Both prioritize work over household tasks, so they try to handle only the minimum necessary chores. • For tasks that are difficult to manage alone, they ask the other person for help.
P10	<ul style="list-style-type: none"> • Daily: Tidying up • Once a week: Vacuuming, cleaning the bathroom • 2 times a week: Folding laundry 	
P11	<ul style="list-style-type: none"> • 2-3 times a week: Laundry (scheduling, washing, drying) • Once a week: Doing the dishes, household cleaning and organizing 	<ul style="list-style-type: none"> • They do not explicitly define the distribution of household tasks but discuss and perform them as needed. • P11 has extensive experience living alone and maintains a detailed standard for household tasks. So P11 is more involved in the execution of household tasks • P11 has a strong internal motivation for household chores and feels a sense of satisfaction from performing them, so he does not feel dissatisfied about taking on a larger share of the work.
P12	<ul style="list-style-type: none"> • 3+ times per week: Washing large dishes that cannot go in the dishwasher • 1-2 times a week: Folding laundry 	

meant pulling out all the furniture and wiping every corner to make sure there were no germs.” (P4, post-interview)

Through these observations, we found that couples are experiencing discord due to differing household standards and styles with their partners, and they are struggling to find an ideal compromise to resolve these incongruences.

4.1.3 Inequitable Division of Responsibility. Couples often adopt an authoritative dynamic for practical reasons to ensure effective household task execution. However, in a relationship between two equal individuals, such a dichotomy in household chores leads to imbalances in the responsibility of household collaboration. In

the study, we found that one person often takes on a dominant role in the household environment, like a “housework boss.” While the specifics varied across families, several recurring characteristics were observed: doing more household chores and excelling at them, planning household activities and setting execution standards, assigning chores to their partner and giving directions, and proactively orchestrating people, home environment, and resources to coordinate household collaboration effectively.

Through the pre-questionnaire and interviews, we identified several contexts that contributed to the emergence of this “housework boss.” These include responsibility based on the presence of clear standards from greater experience with chores (C6) and the imbalance of housework availability caused by one partner primarily

contributing financial income (C1, C4). Additionally, we found that the role of the “housework boss” can be culturally imposed (C3). P6 mentioned how the roles observed in her parents’ household, where she grew up, influenced her sense of responsibility for household chores.

“Since my mom was a full-time homemaker, I was very used to seeing her cook meals and tidy up the house... My husband has framed my sense of responsibility for household chores in a positive light, but to me, it just feels like something natural.” (P6, pre-interview)

From the participants’ probe activity logs, We observed a housework approach where the “housework boss” determines the details, and the other partner follows to manage bothersome chores efficiently in their busy daily lives. However, we also found that this hierarchical structure in household task execution often caused discomfort for both the person ordering tasks and the one following directions. In particular, the housework boss expressed feeling overwhelmed by the heavy responsibility of managing household chores and the burden of detailed oversight. Notably, in all couples except for C2, the housework boss expressed a desire for their partner to handle household chores “initiatively” and “with tact.” P6 expressed a wish for their partner to take the proactive in noticing and completing chores before being told.

“Since I take the lead in household chores, I end up having to assign tasks to my husband. But there are times when I wish he would just take the initiative and do things on his own.” (P2, post-interview)

From the perspective of the one following the boss’s decisions, it was also very challenging to carry out household chores according to the partner’s plans and standards. P5 expressed feelings of confusion when it was difficult to fully understand the predefined standards of chores set by the partner, describing the burden it caused. P1 talked about the situation when doing housework assigned by his partner and said, *“I end up doing more stuff because my wife asks or tells me to, rather than just doing it on my own. And that can be a bit tough sometimes. You know how when you do something because you want to, it feels different than when you’re doing it ‘cause someone else told you to.” (Pre-interview)*

4.2 Underlying Needs and Challenges in Household Collaboration

In this section, we address the couples’ desires and challenges for improving household collaboration, as revealed by the probe study. First, we show how the probe made couples more aware of each other’s hidden contributions. Second, we highlight how mutual appreciation for housework serves as a driving force for collaboration. Finally, we discuss the participants’ need for interventions that facilitate open communication, given the sensitive dynamics of their relationships.

4.2.1 Understanding and Recognizing Household Labor: Uncovering Hidden Contributions. Couples often find it difficult to stay aware of each other’s housework, even while living together, due to various practical reasons. In the pre-interviews, C1 and C2 mentioned that one partner handled all financial matters while the other focused entirely on parenting. After the probe activities, they noted that

clearly dividing household tasks made it harder to understand each other’s responsibilities. Similarly, C3 and C4 pointed out that differing work schedules and commuting times made it challenging to observe each other’s household contributions.

Through the probe activity, participants became more aware of and understood their partner’s housework, which they had not previously noticed. P5, who had mentioned being unable to participate much in household chores due to long commuting hours, and P1, the husband in a single-income household, noted that the sticker chart and diary activities made them consciously think about the division of chores. As a result, they realized that more housework than they expected was falling on their partner. Also, C6 mentioned the positive aspects of increased awareness of each other’s chores through the diary study activities. She noted that recognizing and appreciating each other’s participation in housework strengthens mutual trust and helps approach household tasks with a more positive mindset.

“I think for housework to go more smoothly, we’ve got to make our efforts visible and recognize each other’s work. At first, we were on different pages, but once we better understood each other’s work, I started to believe that we’re both putting in the effort.” (P12, post-interview)

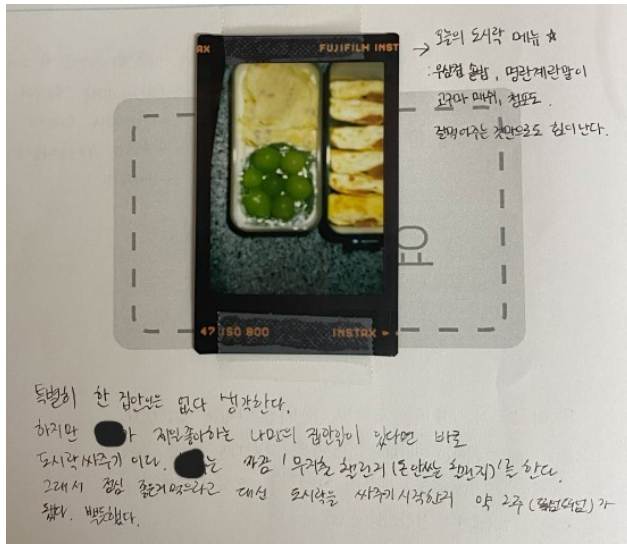
The probe activity not only made participants more aware of each other’s contributions but also expanded their definitions and scope of what they considered to be “housework.” In the pre-interview, P3 said he had been in charge of maintaining the household budget since they got married. P4 mentioned that she had never considered mental tasks like financial management, which her partner does as housework, but now she considers it a significant household task.

Similarly, P12 mentioned that she realized that even non-repetitive tasks that are not strictly assigned can still be considered housework, contrary to her previous beliefs. She also noted that tasks can be flexibly adjusted depending on the situation. Midway through the probe, she began to view “making a lunch box for her partner” as a household task and adjusted their housework reward sticker rule accordingly (Fig.5).

In summary, participants became aware of their partner’s hidden contributions to household chores through the various probe activities. As a result, they understood household chores more broadly and diversely, allowing them to approach and perform these tasks more comprehensively.

4.2.2 Reciprocal Appreciation as a Mutual Driving Force. Participants’ views on housework varied: some saw it as routine or everyday tasks (P2,3,5,7,12), others as tasks done for the family or partner (P4,8,9), while some viewed it as a goal-oriented activity that brings a sense of accomplishment (P1,10,11). Among these perspectives, we confirmed through the probe study that the mindset to do housework for family and partners plays a significant role in household collaboration. P9, during the preliminary interview phase, specifically mentioned that due to the nature of the household chores with two individuals, the responsibility will fall on his partner if he does not do it.

“It’s a shared task that someone has to do anyway, and if I don’t do it, someone else will have to take it on. By



(a) Written description: I did not do any particular household chores today. However, if there's one chore P11 like the most, it's packing lunches. P11 occasionally takes on a "no-spending challenge," so about two weeks ago (on and off), I started packing lunches to ensure they have something good to eat for lunch. It makes me feel proud.

Figure 5: P12's record on packing lunches for their husband as a household work

contributing, I feel like I'm lightening the load of my partner a bit." (P9, pre-interview)

P5 similarly mentioned the influence of one's household chores on the other partner and noted that doing housework could be an expression of gratitude and reciprocation toward their partner.

"My wife also finds it tough to prepare meals every day, but she values doing it for our family. I don't particularly enjoy cleaning the bathroom either, but I do it as a way to show my appreciation to her." (P5, preliminary interview)

Appreciation for one's partner in household collaboration grows when couples recognize how their strengths complement each other. In the post-interview, P8 shared that she became emotionally overwhelmed after spilling some powder, but P7 calmly resolved the situation, revealing his hidden strengths and fostering gratitude. Similarly, during the probe activity, P4 was stressed about their child's financial issues, but observing P3's rational approach made her appreciate the strengths she lacked in herself (Fig.6a, 6b)

We could also observe participants' reflections about their own strengths and roles that complement their partner. This demonstrates that their sense of contribution to the household is highly linked with the sense of accomplishment they feel when doing household chores. P5 expressed pride in his irreplaceable role in tasks like cleaning the bathroom and taking out the food waste, while P7 often felt guilty when unable to do housework and even hoped that some share of the chores would remain for him to complete. Through these findings, we found that the reciprocal

appreciation of doing housework for one another can serve as a mutual driving force between couples and provide motivation for each partner to take responsibility for their own task.

4.2.3 Encouraging Mindful Communication on Housework. While the partnership between couples often motivates household tasks, the relation-centric nature of couples' dynamics can paradoxically hinder honest communication about housework. Participants in the pre-questionnaire reported rarely having in-depth conversations specifically about household chores (P1,3,12), instead engaging in superficial communication through requests (P2,10,11), commands (P6), or feedback (P4,7) rather than meaningful discussions. C4 explained that they avoid discussing housework because they fear damaging their relationship with their partner. P7 acknowledged the need for conversations to coordinate household tasks but said he wanted to avoid conflict that could arise during these discussions.

"Even if it's just something small or minor (dissonance), you have to bring it up and start talking about it for things to clash a little and then get worked out. But I tend to be overly sensitive and fight pretty dramatically."
(P7, pre-interview)

Also, P8 mentioned that she found expressing her opinions or complaints about chores difficult, fearing that her partner might perceive them as nagging. Participants' recognition of the importance and challenges of communication translated into a need for various technologies to assist with conversations. All couples mentioned that it would be helpful if technology could alert the potential issues in advance, allowing them to initiate discussions about those problems. P5 suggested that technology could be helpful if it measured the effort involved in household chores and acted as a cue to start conversations about chore distribution between partners. He also mentioned that incorporating stress index data related to household tasks could better convey the effort involved in chores to the family more qualitatively and precisely.

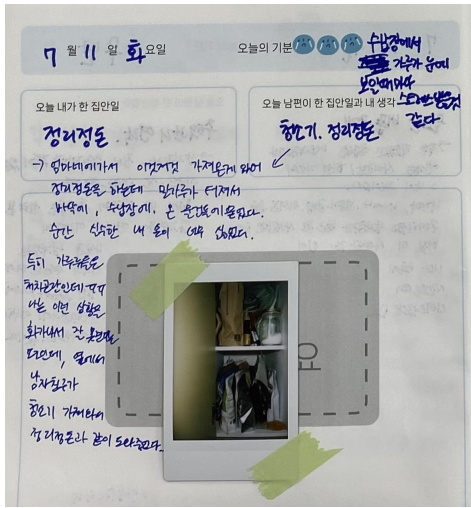
Additionally, a participant mentioned that technology could intervene in household collaboration by delivering uncomfortable but necessary messages between partners. P9 suggested that it would be helpful if technology could review the housework and communicate on their behalf when it is necessary to ask the other person to do certain chores.

"Even when I want to ask a partner to do something if she's got too much on their plate at the time, it is easy for her to snap and react harshly. It'd be nice if technology could just say it for us, so we don't overthink it and can bring it up more easily." (P9, post-interview)

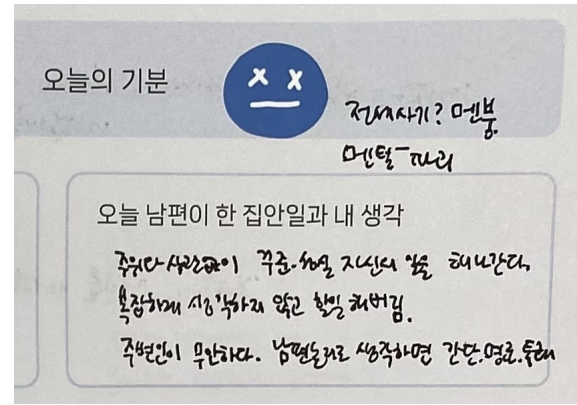
Thus, we identified the couples' hidden need for considerate conversations about household collaboration beyond the barriers of communication triggered by relationship-oriented traits.

5 discussion

Existing domestic technology solutions for household collaboration have primarily focused on task efficiency, often applying workplace collaboration strategies. These solutions aim to address challenges by increasing motivation through gamification with visible rewards [1, 67, 78] or by enabling fair distribution and management of chores [2–5]. However, household collaboration differs significantly



(a) P8 recorded in her diary an experience where, while organizing, she accidentally spilled some powder and felt upset, but P7 calmly helped her.



(b) P4 wrote in her diary about how, although she had a mental breakdown after the real estate scam issue, P3 did not overthink and clearly solved the problem, compare to her.

Figure 6: Records of P8 and P4 related to discovering a partner's strengths in household collaboration

from workplace collaboration, and our study revealed the hidden dynamics unique to domestic settings.

We recognized the need to redefine the challenges and goals of household collaboration and propose design implications for domestic technology. Our analysis revealed problematic patterns stemming from practical difficulties. While standards for collaboration vary based on each couple's circumstances and values, there are conditions that foster a satisfying household life for both partners.

First, we identified the problematic pattern of household collaboration as an "individualized routine," where each partner becomes isolated in carrying out chores in their own way due to communication barriers. Couples often have their own familiar methods and standards for completing household tasks, and unifying these approaches proves challenging. Furthermore, the concern is that communication about household chores could strain the relationship and hinder open communication between partners about these tasks. Additionally, the invisible nature of many household tasks leads to disconnection, where partners are unaware of each other's contributions. In this situation, performing repetitive and routine housework alone decreases motivation. Tasks become burdensome, losing their meaning as no one acknowledges the effort, and this lack of awareness can result in misunderstandings and discord between partners.

On the other hand, we identified the requirements for a household collaboration in which both partners are satisfied as a "shared ritual for celebratory interaction," where tasks are performed together, with open communication and mutual recognition of each other's contributions. This approach has the potential to transform the mundane into the meaningful and the isolating into the celebratory. As revealed in the Findings, a partnership that stems from recognizing and appreciating each other's efforts is the core value of household collaboration, preceding the performance of tasks.

Moreover, sharing decisions and responsibilities through communication was a more significant factor in determining satisfaction with household collaboration than efficiency alone. Thus, transforming housework from a repetitive and unrecognized routine into a meaningful ritual of building a household together can reinforce the significance of these tasks. It requires fostering a process that enhances mutual recognition of efforts, active communication, and collaboration.

Our discussion highlights the overlooked aspects of communication and motivation in couples' household collaboration, which could be linked to the shifting gender norms around shared responsibilities. In this transitional period, where the perception of housework is shifting from being solely the wife's responsibility to a shared task between both partners [56, 72], there is a growing need for support in these areas. Such support should facilitate communication between both partners as equal participants in household tasks and address motivation in a way that applies to both rather than confining it to women's responsibility.

In the context of South Korea, where there are significant generational differences in perceptions of equitable housework collaboration, the current generation of couples grew up observing their parents perform housework based on traditional gender roles [17, 37, 51]. However, in contrast, [56, 72], they are now in the process of establishing their own unique forms of housework collaboration, moving away from conventional and standardized practices. As revealed in Finding 4.1.3, while both partners aim to participate in housework together, one partner ultimately takes on a dominant role, leading to conflicts arising from an inequitable division of responsibility. This can also be interpreted as being influenced by the transitional nature of the current situation. Therefore, based on the problematic patterns and the conditions that foster a satisfying household life for both partners mentioned earlier, it is becoming

increasingly important to develop technological support that helps couples discover their own new ways of managing housework.

In this process of improving the way the couple collaborates, we identified three technological interventions that can support couples in overcoming practical difficulties: 1) strengthening the meaning of housework around family values, 2) supporting recognition of each partner's efforts through visualization, and 3) initiating negotiation through defamiliarization.

5.1 Strengthening the Meaning of Housework by Focusing on Family Values

The critical difference between routines and rituals is that routines essentially convey “this is what needs to be done.” In contrast, rituals communicate “this is who I am/we are” by involving symbolic or cultural meaning and an affective commitment [18]. In other words, the essence of ritualization is helping couples discover meaning and purpose beyond mere repetitive labor in their household routines. One of our key findings was that the meaning of household tasks lies not in the efficiency or perfection of task execution but in the process of building a happy family life together with one's partner. Couples viewed the idea of partnership—thinking of and respecting each other—as a value that must be prioritized and upheld in their household lives. We also found that reciprocal appreciation was the most significant driving force in couples' engagement with household tasks and in their satisfaction with task completion. Therefore, to ritualize household tasks, it would be appropriate to relate the tasks each person performs to their care and consideration for their family. Considering this, we envision technologies designed to support motivation and meaning-making, which encourage everyone to engage in household chores.

Through our findings and analysis of related work, we were able to identify several design points for the ritualization of household tasks. First, shifting the approach from awareness of contribution based on tasks to one based on roles can remind individuals that household chores are not merely tasks but part of “building and maintaining a healthy home.” For example, by highlighting the potential difficulties the family might face if the person responsible for a specific role is absent, we can enhance motivation for performing these repetitive tasks, even without external rewards. Assigning imaginative roles and giving specific titles, such as being the “Avengers” who protect the family's life, can facilitate the ritualization process, with a spouse restoring a toy-strewn home to its original state as “Doctor Strange” in a household with children. Additionally, technology can create opportunities for couples to be reminded of each other's value as cherished life partners. For instance, by utilizing shared data accumulated across various apps or collecting each partner's needs, technology can propose activities that help couples remember the importance of their partner, which they may have forgotten. In this sense, technology can function as a third entity, much like a child or a pet, which helps couples engage in emotional experiences they may have missed in their busy daily lives, thereby strengthening the family bond.

Finally, we can also consider the concept of family ritual, a type of ritual that refers to unique occasions—such as celebrations, traditions, and structured family relationships—that hold symbolic value shared by the entire family [31], functioning as the core of

family culture [13]. For instance, elements of family rituals can be incorporated into a household organization tool like a family calendar. Family celebrations could serve as special moments to recognize each other's efforts [34, 62], while patterned family interactions could be created as periodic and repetitive opportunities to connect and share individual household experiences, much like the role of our probe. By integrating these elements, household chores can become part of a family ritual, reinforcing the familial meaning of household tasks. However, one consideration should be taken into account during this process. It is essential to consider the practical aspects of household life, ensuring that the activities are feasible for each couple's situation and easy for both partners to participate in, rather than adding yet another household chore for them to manage. For instance, one study supported mobile workers, who are often away from home for extended periods due to their work, by designing products that enable simple and accessible family rituals. These included methods for participating in family rituals remotely, even from a distance, or transforming the process of reuniting after long absences into a meaningful family ritual [50]. Similarly, technology should evolve to make family rituals related to household collaboration more accessible and seamlessly integrated into couples' daily lives.

5.2 Supporting Recognition of Each Other's Household Tasks through Visualization

As highlighted in Finding 4.2.1, couples often exhibited a lack of awareness regarding the household tasks their partner handles daily and the effort involved. While the physical aspects of household chores may be relatively more visible, the invisible nature of the cognitive labor—such as anticipating needs, identifying options to meet them, making decisions, and monitoring progress—was particularly pronounced. This invisible labor was frequently a source of conflict for couples, as confirmed by existing research [19, 24]. Moreover, as noted in Finding 4.1.2, when couples have different approaches and standards for household tasks, it becomes even more difficult to recognize each other's efforts. These invisible household tasks, as mentioned in Finding 4.2.2, diminish the motivation derived from respecting and appreciating a partner's contributions to the household.

Given the practical challenges and needs that coexist, the process of making each partner's household efforts visible and shared is an area where technology can provide valuable assistance. The information identified through our analysis as beneficial for awareness includes the partner's effort, the partner's characteristics that complement me, the partner's style and standards regarding household chores, and the underlying reasons behind those standards and approaches. The first two types of information help foster appreciation for the partner, while the latter two aid in understanding the partner's approach to household chores. Such information focuses more on understanding the state and thoughts of the partner performing household tasks rather than the quantitative results of task accomplishment. For example, it could take the form of visualizations that externalize the partner's thoughts and emotions related to household collaboration, prioritized according to their

significance in the partner's emotional state. This approach encourages couples to pay attention to and understand even the invisible aspects of their partner's household life.

One key point is that it is not always helpful for technology to reveal all information to both partners. In our study, the positive emotions couples experienced were not derived from the surface-level act of recognition itself but rather from the feeling that their partner was genuinely considerate and attentive to them. We must consider these emotional interactional characteristics when facilitating communication between couples [42]. Furthermore, as seen in the side effects of existing services, the act of recognition should not become another cognitive household task that makes users' overall household workload heavier [75]. Therefore, the role of technology should focus more on making invisible aspects of household life noticeable rather than directly providing all the information. A similar finding was observed in domestic IoT research [49], where abstracted information from IoT systems sparked curiosity and increased interactions within families. In this way, it would be more appropriate for technology to offer qualitative cues, such as signs of a partner's household efforts or fatigue, that prompt attentiveness to their contributions. This approach is akin to product placement in media, which does not interrupt the viewer but generates interest and curiosity about the product. However, in the process of identifying the point where recognition is needed, the technology must continuously monitor and collect data on the couple's everyday domestic activities. Therefore, it is crucial to acknowledge that technology can create an unnecessary sense of being observed for residents, regardless of whether the collected data is actually used [28]. Thus, it is necessary to establish appropriate boundaries for data collection.

5.3 Providing a Starting Point for the Negotiation Process through Defamiliarization

As highlighted in Finding 4.1.2, each person has different standards and methods for household tasks. As discussed in Related Works 2.1, how couples perform household chores varies depending on their circumstances [52, 58, 76, 79, 80]. Thus, engaging in discussions and negotiations about household tasks is an essential part of household management for couples. However, as noted in Finding 4.2.3, couples often hesitate to initiate such discussions out of concern for harming their relationship. Conflict stemming from differences in communication styles between partners is a common issue [7]. Moreover, the routine nature of household tasks [11] adds another difficulty when reflecting on and discussing them. A lack of goal visibility and ambiguous task organization are also critical features of couple collaboration [27, 42]. As stated in Finding 4.1.3, some couples resolved this issue by allowing one partner to take on decision-making power and responsibility. However, this approach created discomfort for both the decision-maker and the partner following the decisions. Consequently, couples expressed a desire for technology that could help identify their issues, mediate, and offer an optimal compromise. However, a solution where technology entirely replaces critical thinking may fail to address the root problems effectively [34]. Additionally, it should be considered that technologies can control household members' lives and

often amplify inequality by exercising disciplinary power through observation and judgment [29, 30].

In our probe activities, couples were encouraged to reflect on their existing household collaboration from different perspectives. Through diaries, they observed how each partner felt differently about the same events and experienced a new form of housework by requesting things they had always wanted from each other in the form of missions. In the pre-interview, couples had difficulty explaining their household collaboration. However, in the post-interview, they could describe the characteristics, issues, and hopes for their household collaborations in detail. It demonstrates that the probe provided questions and an environment that encouraged new activities effectively served as a reflection cue, prompting participant couples to reconsider their household routines.

Defamiliarization refers to a literary technique and method that calls into question our usual interpretations of everyday objects [8]. Similarly, domestic technology, like the probe, can function as a tool and environment that enables couples to view their repetitive household routines from a fresh, unfamiliar perspective, helping them reflect on their chores and initiate the negotiation process. Through such defamiliarization, couples may identify and resolve hidden sources of conflict or their underlying desires, which could prompt their own negotiation and problem-solving, potentially leading to the development of their own ways of managing housework.

Using unusual language, syntax, or structure to subvert the reader's expectations is the most common method of defamiliarization in writing. In prose, as much as poetry, writers can use odd word choices, broken phrases, and surprising metaphors. Instead of passively consuming the text, this compels readers to interpret it actively [71]. Unfamiliar forms of domestic technology might potentially serve a similar role to unusual language. Research findings show how the introduction of robot vacuum cleaners increased social interaction among people who viewed the robot as a social entity, supporting this idea [32, 33]. Additionally, a study that created a reverse clock, which applied a new way of marking time-based on parenting routines, serves as another example of how altering the expression of domestic technology can change how couples think about their domestic routines. The reverse clock helped working couples feel like better parents by aligning with their parenting routines and preventing young children from waking them during sleep hours [61].

6 Limitations and Future Work

This study presents some limitations in the context of diversity and inclusivity. Primarily, our research was localized to South Korea, thus impacting the diversity of our participant pool regarding nationality, sexual orientation, and marital status. The legal landscape surrounding same-sex marriage in South Korea makes it challenging for gender-diverse individuals to disclose their identity publicly, leading to an exclusively heterosexual set of participating couples. Therefore, the societal norms and expectations around heterosexual relationships, including traditional gender roles and household responsibilities, shaped the dynamics observed in this study, limiting the exploration of diverse relationship structures. Also, while we made every effort to preserve the nuances during the translation of the participant materials from Korean to English, some meanings

may have inevitably not been fully conveyed in the process. Additionally, In terms of household dynamics, our study focused only on couples who are primarily responsible for household tasks without considering other types of household compositions. Future studies could explore various family relationships and household configurations, including children, flatmates, or external help, to provide a more comprehensive understanding of household collaboration. Lastly, the scope of this research is exploratory, laying the groundwork for design directions but not implementing them as actual services. Further research is warranted to develop technology-based interventions based on suggested design implications. By acknowledging these limitations, we are making an explicit call for subsequent studies to prioritize more diverse and inclusive sampling strategies, as well as to adapt research methodologies to account for different cultural contexts.

7 Conclusion

Our study aims to understand couples' household collaboration and suitable technological support tailored to the unique context of housework. Based on 10 days of empirical studies, we were able to determine what couples' real household life was like and their underlying needs. We found that shifting the couple's collaboration from 'individualized routines for task accomplishment' to 'shared rituals for celebratory interaction' is essential for building a foundation for their satisfying homemaking. Consequently, we suggest three technological interventions to support couples in this transition: 1) strengthening the meaning of housework around family values, 2) supporting recognition of each partner's efforts through visualization, and 3) initiating negotiation through defamiliarization. Our research results will encourage domestic technology research to adopt a broader perspective on the values that influence the satisfactory execution of domestic activities and to explore new roles for technology in supporting them.

We acknowledge the use of ChatGPT, a language model developed by OpenAI based on the GPT-4.0 architecture, in our research. ChatGPT provided assistance in sentence editing throughout this paper.

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