



The Everyday Problems of Working Parents: Implications for New Technologies

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In this paper, we describe a questionnaire study exploring the everyday problems of working parents. A total of 715 working parents rated the extent to which 27 problems affected their everyday lives. The data were analyzed in terms of severity of problem and differences in terms of gender, age of children, and country of origin. The findings point to important areas for the development of new technologies to support a person's whole lifestyle.

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ABSTRACT

In this paper, we describe a questionnaire study exploring the everyday problems of working parents. A total of 715 working parents rated the extent to which 27 problems affected their everyday lives. The data were analyzed in terms of severity of problem and differences in terms of gender, age of children, and country of origin. The findings point to important areas for the development of new technologies to support a person's whole lifestyle.

Keywords

Working parents, questionnaire, everyday problems, home and work, mobile technologies.

INTRODUCTION

The last decade has seen many important technologies originally designed for the workplace inexorably pervading life outside of the office. For example, in the 1990s, we saw the PC and the Internet find an important place both in homes and in schools. Likewise, in the last few years (especially in parts of Europe and Asia) the mobile phone has found its way not only into people's briefcases, but also into their cars, handbags and even schoolbags.

The infiltration of office technology into home life combined with the boom in mobile technology raises interesting questions about how people draw on such technologies to manage their own boundaries between work and home. It also raises the possibility that it may no longer make sense to compartmentalize technology as being "for work" or "for home" but rather as fitting in a more integral way into people's whole lifestyles.

With this theme in mind, we decided to explore the everyday lives of people who have demands in both work and home spheres to understand the role of technologies in crossing home-work boundaries. The ultimate goal was to see whether there were interesting opportunities to improve or invent new technological solutions that would support a variety of needs across the different contexts in which people find themselves (e.g., at home, at work, or when mobile).

Why Working Parents?

Working parents are interesting for at least two reasons. First, they represent perhaps the extreme of people who have heavy demands in both the work and home spheres. Research shows [1,4] that such households employ many different strategies for dealing with the interplay of work and home, and for coping with the demands this imposes.

Second, households where both parents work constitute an increasing proportion of the UK and US workforce [6,8]. For example, increasing proportions of mothers now work full time with the rate of employment rising fastest amongst mothers of pre-school children (e.g., [5]).

Previous Research

In the sociological, anthropological, and psychological literature, the topic of working parents has been researched quite widely. Aspects of this research include when and why women work (e.g., [6,8]), the consequences of women's changing roles for men (e.g., [9]), and the division of domestic work by mothers and fathers (e.g. [9]). Such research on the demographic, sociological, and cultural issues of working parents provides important context for understanding this segment of the population. However, it does not generally look at the role of technology within the lives of working parents, or consider ways in which new technologies might be introduced.

For this kind of research, we need to look to Human-Computer Interaction (HCI) and Computer-Supported Cooperative Work (CSCW). However, in both fields, the majority of the literature has confined itself to work activities and office environments, and the implications of these findings for the design of work-related technology. More recently, however, two new trends are changing this. First, there is increasing interest in applying both HCI and CSCW techniques to the home domain, giving us new insights into family life (e.g., [10]). Second, researchers are turning their attention to what people do when mobile (e.g., [2]), giving us a new perspective on the use of mobile technology for personal or social reasons.

Despite this fact, HCI and CSCW research has tended to be situated either within the confines of home, of work, or in mobile situations. With only a few notable exceptions [3,5,7], very little HCI or CSCW research has targeted the lifestyles of particular segments of the population (such as working parents) or looked more generally across home-work boundaries with an eye to the design of technology. Our own program of research has been designed to begin to explore this relatively new area.

Approach

This short paper reports on a follow-up study based on an earlier more in-depth piece of research that was designed to understand in detail the lifestyles of a sample of working parents in the UK [1]. In that original study, we

administered a lengthy questionnaire to 64 working parents and carried out in-depth interviews with 28 of them. This research highlighted many of the concerns and issues that arise in everyday life, and the stresses and strains that such a lifestyle imposes in the home sphere, at work, and while mobile. In addition, many of these had to do with the crossover of home into work, work into home, and the difficulties of coping with both home and work demands while mobile, particularly while in the car.

In analyzing these results, it became clear that, first, there seemed to be a set of problems mentioned frequently in the data, or arising as more general themes. Second, while many of these “everyday problems” were dealt with in sometimes artful ways drawing on different kinds technologies and artifacts to hand to do so, for some of them, there seemed to be opportunities to develop new technologies that might support the needs of working parents better. In the final analysis we extracted a set of 27 such problems that we felt held such potential.

With regard to these problems, we had three key questions:

- How generalisable were these 27 problems to a larger and more diverse set of working parents? After all, while we had rich data from the first study, the sample was relatively small (64 people).
- Which of these problems were considered by working parents to be the most severe? Knowing this would enable us to target a smaller cluster of problems, and to look more closely their key characteristics with an eye to the design of technological solutions.
- Were such problems related to other important factors such as gender of parent, the age of children in a household, or the country in which working parents live? Knowing this would also help target not only the design of new technological solutions but also their marketing.

With these questions in mind, we designed a Web-based questionnaire in order to validate and expand our understanding from the first phase of research.

METHOD

A questionnaire was developed through three iterations with 26 people within HP Labs. In the final version, we split the questionnaire into two sets of questions (13 in one and 14 in the other) so that time to complete it took less than 5 minutes. Participants would randomly receive one subset of questions or the other.

After providing some basic demographic information, each participant was randomly presented with either subset of 13 or 14 problems. Each problem statement was shown in bold, followed by a more particular example of the problem. Participants were asked to first to say whether or not this problem was relevant to their own everyday lives, and if yes, to rate on a seven point scale the extent of the

problem to them, basing their judgment on the statement in bold rather than on the example that followed it. E.g.,

“I’d like to preserve our family’s memories better than I currently do. For example, I have lots of photographs I haven’t put into albums yet, but I never have time to organize them.”

After each problem, they could optionally add comments to qualify their statements. On completion, there was a final opportunity to add comments on the questionnaire itself, or to mention extra problems they felt ought to be included.

Participants were recruited for the questionnaire via email to a selection of HP sites, asking for volunteers also outside HP, amongst friends and family. Participants had to:

- be married or cohabiting;
- have at least one dependent child living at home;
- be in a household where both adults worked at least 20 hours per week;
- live in either the UK or the US.

Analysis

Questionnaire items were analyzed statistically using SPSS looking in particular at differences according to gender, country of origin (US or UK), whether a participant was an HP employee or not, and age of youngest child in the household. Comments were compiled and examined for each everyday problem.

FINDINGS

A total of 715 people filled out the questionnaire (370 receiving a subset of 14 the 27 questions, and 345 receiving the other 13 questions). There were more males in the sample than females (57% male), and 80% were based in the US compared with 20% in the UK. These differences were due to the email mailing lists used and the fact that the biggest response was from HP lists on the west coast of the US. Furthermore, despite our request to forward the questionnaire to friends and family outside the company, 83% of respondents were from within the company. Nonetheless, because of the overall sample size, we were still able to obtain good sample sizes for the UK population and for respondents outside the company as points of comparison.

A final dimension along which the data were segmented was according to age of children of the respondents. Because our earlier work showed that many of the everyday problems we were concerned with appeared to be most significantly affected by the age of the *youngest* child in a family, we classified the sample according to whether the youngest child in a household was: preschool age (under 5 years old); primary (or elementary) school age (5 - 11), high school age (11-16) or over 16. Sample proportions along this dimension were 38% preschool, 33% primary, 22% secondary, and 8% with the youngest child over 16.

Severity of Problem

In order to classify the most severe problems, the 27 problems were rank ordered by adding together the percentage of respondents for each problem assigning extreme ratings of either a “6” or a “7” (see Table 1).

Nine of the problems were assigned a 6 or 7 rating by over 30% of the sample (which we call the “severe” problems). For a further seven problems, 20% to 30% of the sample

assigned either a “6” or “7” rating. We will call this set “moderately severe”. Both are shown in Table 1.

Although these 16 problems “rise to the top”, it should be noted that the remaining 11 problems were also assigned either a 6 or 7 rating by at least 9% and up to 20% of the sample. In other words, as we had suspected based on our prior work, all 27 everyday problems we proposed were recognized as highly problematic for a significant proportion of our respondents.

Table 1. The 16 highest ranked everyday problems rank ordered by severity (the sum of percent assigning ratings of 6 or 7).

Most Severe Problems	% 6 or 7	Moderately Severe Problems	% 6 or 7
“I’d like to preserve our family’s memories better than I currently do. For example, I have lots of photos I haven’t put into albums yet, but I never have time to organise them.”	49	“Sometimes I can’t access my spouse/partner’s diary even though I may need to. This may mean, for example, I need to contact them or wait to speak to them to check on dates and appointments.”	22
“I worry about my health and/or diet as well as the health and diet of my family. For example, because of lack of time I may be more likely to cook something quick rather than a home-cooked, well-balanced meal.”	44	“When I’m working, sometimes I need to take care of domestic things which can be difficult on work time or using work resources. For example, I may need to make appointments, book holidays or arrange child care when I’m at work.”	24
“I have too much paper in the house; too much comes in from the outside that I need to manage. For example, this includes flyers, brochures, notes from the community, notes from the school and things coming in through the post.”	41	“When commuting between home and work in the car, I often think about the things I need to do. If I weren’t driving I feel I could use this time better. For example, there are messages I need to send or phone calls I need to make, as well as diary entries I need to make or check.”	26
“Planning and cooking meals for the family can be stressful. For example, sometimes I have to cook more than one meal for different members of the family.”	36	“I find it hard to supervise and help my child/children with their homework. For example, it’s difficult to keep track of what needs to be done and when it needs to be done by.”	22
“I sometimes find myself shopping without knowing everything we need to buy. For example, I may have left my shopping list at home, or have not had a chance to make a list.”	35	“I’m always having to remind other people in the family of things they need to take with them when they leave the house or go somewhere. For example, in the morning I have to keep track of what the family needs for school and for work that day.”	24
“I don’t have enough time to do shopping any more. For example, there are lots of things I need or the family needs and there never seems to be enough time to do this.”	35	“There’s a lot to do in the morning and the added demands of children can make them even more stressful. If I had a better way to keep my child/children occupied, for example, I could get on with things.”	22
“I find it difficult to remember all the activities my family needs to do in a day as well as everything I need to do. This can create a big demand on me to manage the activities and remind the family about them.”	34	“I don’t really have the technology or resources I need at home to take care of my work responsibilities when I want to or need to. For example, if I could access my work email or important documents I would have more flexibility to work when I want.”	20
“It can be stressful getting from home to work, and work to home especially if a child has to be dropped off or picked up. For example, often traffic is a problem and there are places I need to be at specific times.”	32		
“Sometimes, plans for the day have to change quickly and things have to be rearranged, which can be a real problem. This may be due to a domestic crisis (like a child is sick), for example, or because something unexpected has happened at work (like having to stay late).”	30		

Country of Origin

Significant differences in mean severity ratings for country of origin were found in only three cases for the problems in Table 1. American respondents gave higher ratings than the British to the problems of planning and cooking family meals (3.95 vs. 3.29, $p < .03$), and reminding people in the family about things they need to take with them (3.61 vs. 2.84, $p < .008$). The British rated the problem of commuting and the stress associated with it higher than the Americans (4.30 vs. 3.33, $p < .008$).

HP vs. Non-HP

Differences in mean severity ratings for HP versus non-HP employees were found in, again, only three cases for the problems in Table 1. HP respondents gave higher ratings than non-HP respondents to the problems of having to rearrange things in a crisis (4.18 vs. 3.63, $p < .04$), stresses in the morning (3.14 vs. 2.31, $p < .01$), and not having adequate technology at home to take care of work (2.67 vs. 1.97, $p < .04$).

Sex Differences

There were statistically significant differences between men and women for four of the problems listed in Table

1. As Table 2 shows, in all four cases, women rated the problems as more severe than did the men.

Table 2. Sex differences for problems listed in Table 1.

Problem	P value	Mean for Women	Mean for Men
Preserving family memories	p <.038	5.10	4.63
Planning & cooking family meals	p <.001	4.41	3.34
Finding time to do the shopping	p <.001	4.45	3.44
Reminding people in the family	p <.001	4.28	2.81

Age of Youngest Child

In all, six problems were significantly affected by the age of the youngest child in the household. Three of these problems found significantly higher ratings, using Tukey HSD tests, between households with children *under* 11 compared to households with children *over* 11. These were: stress in the morning, dropping off and picking up children, and finding time to do the shopping. The other three problems found different patterns of results:

- Reminding people in the family: Problems were rated as most severe for households with the youngest child of primary school age than those with the youngest child over 16 or under 5.
- Accessing partner/spouse’s diary: Parents with the youngest child over 16 rated this as more severe than those with youngest child between 11 -16 or under 5.
- Help with homework: Parents of primary and secondary school age gave higher ratings than those with youngest child under 5 or over 16.

DISCUSSION AND IMPLICATIONS

The results of this questionnaire confirmed the extent to which all 27 of the everyday issues we proposed were in fact recognized as problems by a significant proportion of working parents. It is interesting, however, to look more closely at the 16 problems judged to be most severe. The first observation is that most of these are home -related (as opposed to work -related) concerns. However, only six of these (i.e., family memories, paper in the home, health and diet, cooking meals, homework, and morning stresses) concern home activities situated *within* the home environment.

The remaining ten problems can be understood mainly as a function of the interplay between home and work activities and how these pervade everyday life regardless of physical location. Indeed, looking closely at comments made by respondents associated with each problem, the data indicate there are at least 4 important factors here:

- The complexity of managing both work and home activities and the overhead imposed by planning, coordinating, scheduling and monitoring them;

- The sheer demand imposed by taking care of both work and home activities meaning there is little time to spare for all but the most important;
- The need to do “crossover” activities: work activities at home, or home at work. This includes needing important information or resources from one place when in another, and being connected with one place (or the people in it) when in another.
- Being mobile between work and home locations (as well as other places). In addition to the problems this causes in accessing people and information, being mobile imposes its own additional stresses and constraints such as those associated with driving.

The results of this questionnaire, while only in the preliminary stages of analysis, thus already underscore the extent to which many of the problems in the lives of working parents can only be understood in the larger context of everyday life. For example, many of the issues involve the fact that, due to the nature and extent of the demands in working parents’ lives, many activities cannot be compartmentalized. In other words, they must be accomplished whenever and wherever they can be, whether that is at work, at home or on the move. This may well have implications for technologies that are themselves more pervasive, more networked, and more mobile. But it also points to solutions that are sensitive to work versus home-related needs, which may have the flexibility to support both, and which can help cope with the complexity of moving between these different spheres of activity.

NEXT STEPS

The work we are now undertaking involves more closely analyzing the results for each particular problem, including the large database of comments in response to each problem statement. This will give us guidance on potential technological solutions. In addition, data on factors such as gender differences, age of children and country will help us target working parents for running workshops to explore each of the key areas these problems point to. Through these workshops, we aim to explore the potential for technological solutions that may go some way to helping alleviate some of the problems and stresses working parents encounter in everyday life.

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