Life Scheduling to Support Multiple Social Roles

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ABSTRACT
We present the results of our study of 15 working parents, and how they manage their *life scheduling* needs, that is, how they manage their personal and professional schedules across settings and calendaring tools. In particular, we discuss how their dual roles of parent and employee compel them to record personal information on their professional calendars and we detail the tensions that arise in doing so. Finally, we present suggestions for future calendaring applications that better support working parents in managing their life scheduling needs.

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Calendars, groupware, social roles.

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H.5.3. Information interfaces and presentation (e.g., HCI): Group and organization interfaces.

INTRODUCTION
During the course of each day, people move between numerous social roles that can in turn influence how they use technology. As networked applications make personal information more easily accessible to others, people adjust how they use these applications based on the expectations associated with their varied social roles. The workplace is one setting where the personal and professional aspects of one's life may come into conflict. For example, when individuals make their private music libraries accessible to coworkers, they may intentionally include or exclude certain tracks to craft a certain work-appropriate image [8]. Managing one's calendar is another place where individuals, particularly parents, must balance multiple roles. Previous research on working parents has identified the need to manage family and work as the defining feature of the working parent's life [1] while surveys [2,4] have revealed challenges individuals faced around synchronizing multiple calendars and sharing calendars.

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While the domestic and workplace settings afford different scheduling behaviors, the calendar[1] is a tool that is used in both domains. Researchers have examined calendaring at work [6,7] and at home [2,3,4] and looked in general at interactions between work and personal lives [5], but there has been relatively little exploration of scheduling across these domains with the exception of Beech *et al.* [1]. The work done by Beech *et al.* surveyed numerous aspects of the working parent's life (with calendaring being just one component), we extend that work by taking an in-depth look at the way that individuals' personal scheduling needs come into the workplace.

We conducted 15 interviews and analyzed over 1400 events from our participants' calendars to understand how working parents engage in *life scheduling*, that is, the holistic management of personal, family, and professional schedules across settings and calendaring tools. In this paper we describe how and why parents move scheduling information from the personal to the professional realm of life, and the challenges that arise in doing so. Furthermore, we will discuss implications for the design of workplace calendaring software that adjusts to support the needs that result from individuals' multiple social roles.

METHOD
We interviewed 15 people (8 men and 7 women) working in a variety of occupations in the Seattle, WA area. We recruited participants that had at least one child aged 4-17 and in school because they were likely to have a diverse range of scheduling concerns stemming from their need to manage their own appointments and those of their children. While our participants varied in the control they had over their work schedules, all had control over what they chose to put on their calendars and who had access to it.

During the interview, participants showed us their work and family calendars (10 of 15 participants maintained separate ones), shared with us how they use these calendars to manage their personal and family activities, and described the appointments on multiple days of their calendar(s). We used affinity diagramming to derive themes from the interviews. We also collected printouts and copies of two

[1] As our study focused on scheduling practices in the USA, we use the American term 'calendar' in this paper to refer to a tool that denotes days of the year and which is used to manage appointments.

months (one winter and one summer) of calendar data from as many participants as possible. We obtained professional calendars from 12 participants and family calendars from 7 participants and examined a total of 1474 events. Most of the participants who did not provide us with their calendar data were concerned with us maintaining records of their personal or business-confidential information. All of our participants used the Microsoft Outlook™ calendaring application at work and varied in the tools they used for their family calendars (most used paper calendars but one person used Outlook).

We analyzed the calendars by looking at the nature (*e.g.* personal versus work-related entries) and quantity of the events (not including pre-printed ones) on our participants' work and family calendars. We also counted what types of scheduling information moved from one domain to another (*e.g.* personal events on the work calendar), using a conservative approach. For example, events on the work calendar were assumed to be professional events unless they were clearly personal based on discussions in the interview (and vice versa for family calendars).

BALANCING THE PERSONAL AND PROFESSIONAL

Our participants' life scheduling practices were characterized by how they allowed scheduling information to flow between their personal and professional lives and among family members. The most extensive flow was personal information moving into the professional realm of life, and it is here that we will focus our discussion for the remainder of the paper. In particular, we will describe how the dual roles of parent and employee affect the ways that our participants use workplace calendaring tools, and the breakdowns that occur during this use.

Overall, participants were liberal in the amount of personal information they placed on their professional calendars. Of the 1031 events we examined on work calendars, 397 were personal (39%). In fact, we saw almost four times more personal events on professional calendars as professional events on family calendars. Three of the five participants that maintained only one calendar (that is, they did not have separate family and professional calendars) shared their calendars with us and an average of 60% of their events were of a personal nature. Nine of the ten participants who maintained both a personal and professional calendar shared their calendars with us, and an average of 25% of their events were personal. Examples of the types of personal scheduling information that people placed on their professional calendar include social activities, sporting events, medical appointments, birthdays, and school events for their kids.

In the following sections, we describe the reasons individuals wanted to bring personal scheduling information onto their professional calendars and the tensions that resulted.

Reasons for Including Personal Information

Being Reminded of Personal Events

Calendars are clearly reminding tools, but we found it interesting that some participants felt that their work calendar was a more effective memory aid than their family calendar for personal events. This seemed to be because the work calendar is visible more often, allowing them to explicitly look up events and to be reminded of upcoming events while browsing their calendar. Having personal information on the work calendar also supported individuals in keeping their spouse informed of upcoming activities. For example, P15's husband asks her to remind him of his appointments so she includes these events in her work calendar. P14 and her husband communicate during the day to keep each other aware of new appointments and to remind one another of existing appointments.

Having children was a primary reason for why our participants put personal events on their professional calendar. Of the 397 personal events we found across our participants' work calendars, 26% of these personal events clearly related to their children (103 of 397). Our participants put these events on their calendars to keep themselves aware of what was going on in their children's lives. For P1, the benefit of having her son's schedule on her work calendar is that she has numerous opportunities to be reminded of upcoming events. She noted, *"If I had [more of my son's schedule] in my Outlook calendar, if I was reminded throughout the day then I could kind of prepare or plan a little bit better."* Parents also record events they are not attending, for example P4 included much of his daughter's soccer schedule on his calendar so that he could keep up with what was going on in her life, even though he did not plan to attend most of them.

Workplace as Scheduling Sanctuary

We were surprised to see that many of our participants preferred planning and recording personal appointments in the workplace environment. Some individuals in our study took time during their workday to plan personal appointments (*e.g.* family outings and medical visits) and received event updates that led them to record much of that information directly onto their work calendar. P14 relies on the calm of work to manage her personal and family appointments: *"I find scheduling things after [work] hours – I really don't like doing it. I'd rather do it at work, when I'm sitting here, because that way my calendar is right here… This is the only free time I get to actually sit down and get to schedule anything or plan anything. Because you know with two kids at home you really don't have a chance to sit down and do anything."*

Keeping Co-workers Informed

All of our participants interacted with others to get their work done. While they varied in the degree to which they needed to make their whereabouts known to coworkers, most participants indicated that some awareness was important for their work groups to function. Ten of our 15

participants provide electronic access to their work calendar for their colleagues. Of the five participants that do not electronically share their calendar, three indicated they would like to share with co-workers, but that their office network infrastructure did not support sharing. Placing personal information on their work calendars was an important part of keeping coworkers aware of their whereabouts. Facilitating this awareness meant including personal appointments that occurred during the work day or just outside of the working hours.

Tensions Arising from Conflicting Social Roles

Maintaining Privacy

Our participants varied in their concerns over the privacy of the personal information on their calendars. Some people indicated that keeping coworkers aware of their availability was worth any loss of privacy. For example, P15, who shares details, puts doctor appointments on her calendar and does so because it is important to her that her coworkers know where she is during the day. Similarly, P11 includes personal information on his calendar (*e.g.* medical appointments and religious meetings) and shares the details of his calendar with coworkers. Others that shared calendar entries explicitly chose to omit information (*e.g.* a doctor's name or location)–a behavior Palen [6] termed *cryptic & context sensitive entries*–to maintain privacy when sharing calendar entry details (rather than just sharing free/busy information). Surprisingly, only four participants made use of the 'private' tag available. The infrequent use of this feature may be due to a number of reasons, for example, in our interviews we saw that some people forgot to use this feature or did not realize it existed.

Aggregating Personal Information

Though our participants valued their work calendars as personal appointment repositories and awareness tools, they encountered significant problems aggregating information from multiple sources. For example, participants had trouble managing the information sent home by their children's schools and extracurricular organizations. This information was sent through various channels (*e.g.* paper flyers, emails, and websites) and they wanted an easier way for that information to be recorded on both their work and family calendars. P15, who has had problems getting her daughter's school schedule onto her work calendar, noted: *"The preschool also sends home the school calendar and what I should be doing is copying that stuff into [my Outlook calendar] 'cause I have forgotten almost every special thing we were supposed to do, [for example], 'bring eggs to color for Easter'… You'd think that everything in the world was on [my Outlook calendar] but it's not – it should be."* People also need the ability to modify the incoming events to better match how they manage their calendar. For example, P9 would like to receive calendar information from his wife. However, unlike him, she does not typically include the event start and end times in her calendar entries, causing a mismatch in calendaring styles.

The aggregation problems that our participants face would not be solved simply by granting them access to their work calendars at home. As previously noted, many of our participants valued placing personal information on their work calendars while at work. The problem arises in trying to funnel personal scheduling information that is generated outside of the workplace into the work calendar. One of our participants physically brought her paper-based appointment information into the workplace to enter it onto her calendar. Thus, it was a challenge for our participants to move analog and digital information onto their calendars. It was important for them to ensure that their work calendars are up to date with their personal appointments both for their own awareness and their peers' awareness.

Peer Judgment

Working parents may place personal appointments on their calendar just to keep themselves aware of what is going on in their family's life, not because they necessarily plan to attend those events. However, by doing this they may be setting themselves up for incorrect judgment by their coworkers. For example, P4 who had included his daughter's soccer schedule on his calendar even though he did not plan to attend the events, became concerned about judgments by his coworkers, because in his office culture people assumed that any appointment marked on his calendar meant he was busy. He told us that many of his daughter's soccer events happen during his working hours and noted, *"I don't want my boss to see it and think, you know, that I'm leaving early because I'm not... You know people look at your calendar and they think just 'cause it's there that I did anything about it."* In 1999, Palen [6] also noted how shared work calendars can create the opportunity for peers or managers to make judgments about how people are spending their time. Eight years on, we find that individuals are still struggling to manage peer judgments. Furthermore, our findings highlight how incorrect peer judgments can result from the conflict of wanting to keep oneself aware of family members' lives and a workplace culture of assessing individuals' availability based on their calendar events.

Employer Concerns

Employers may not be comfortable with employees using office calendaring applications for personal reasons. As mentioned previously, the inclusion of personal events is on the one hand necessary to keep coworkers aware of one's whereabouts. At the same time, including personal appointments outside of working hours, or including appointments just to keep one's self aware of what is going on in family members' lives may or may not be acceptable in all workplace environments. Zerubavel [9] observed that the freedom to flexibly structure boundaries between personal and professional lives is typically associated with higher status jobs, thus depending on the nature of the job and the workplace culture, the working parent's desire to include personal information on their calendar (or, indeed

even choose the calendaring application that they use) may come into conflict with the employer's desires.

DESIGNING FOR LIFE SCHEDULING

To address the tensions described above, we present the following recommendations for designing calendars that better support the flow of personal information into the realm of workplace calendaring.

Support Role-sensitive Sharing: Several calendaring programs allow users to create multiple calendars (*e.g.* a personal calendar and a professional calendar) which the user can view together and toggle on and off. While the desire to help users organize their calendar information is excellent, challenges arise when considering how this information will be shared with others. For example, if the user restricts personal events on their personal calendar (e.g. in Google Calendar™), he or she must either share both the personal and professional calendars to keep co-workers informed about their availability or duplicate personal events onto their work calendar (thus defeating the point of having two for organizational reasons).

This suggests the need to support more fine-grained control of how calendar information is shared. For example, a user might want to share the aggregation of several calendars or tag items within a single calendar to share with particular people or groups or perhaps have sharing rules (*e.g.* anything after 5pm is shared with my spouse). More flexibility would allow users to share one subset of information with co-workers and another set with family.

Custom Subscriptions: Our study suggests people will need to customize the calendar information they receive and how it is displayed on their calendars. For example, when subscribing to events from a child's school end-users will need the ability to specify which events are relevant and interesting to them, otherwise they risk being swamped by every event from the school or requiring that schools publish different feeds for every classroom and extracurricular activity. This example illustrates the importance of calendar clients allowing users to easily customize subscriptions to calendar feeds and modify incoming calendar events (which some applications already do, but on a per event basis).

Private Notes: In current calendaring software such as Microsoft Outlook™, users have the option of sharing only free/busy information or complete information about an event. This caused problems for our participants that wanted to share some information (like the fact that they had an appointment they could not miss) but not all event details (like their doctor's address). Having space to record event information that would never be shared with others would allow users a place to put particularly personal event details. This approach would address some of the privacy concerns we saw in our study without forcing users to record personal details outside of their calendar (which we saw participants doing).

CONCLUDING REMARKS

While other research has examined workplace calendars and noted that personal information appears on work calendars (*e.g.* [1,6]), we have described the specific scheduling tensions that arise for working parents. These challenges suggest the need for more flexible calendaring interfaces that support individuals in managing their life scheduling needs, needs which are characterized by the competing demands placed on them by their roles of parent and employee. Although our design recommendations are derived from our close examination of calendaring needs, they may be more broadly applicable to other technologies that cross role boundaries. For example, social networking sites may want to further investigate role-sensitive sharing as more people create online content that is viewable by diverse social groups. As the boundaries between technologies used for personal and professional reasons become less clear we anticipate an increasing need for applications that support the multiple roles people hold.

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