
A Longitudinal Interview Study on Work Planning During COVID-19 Lockdown

Yoana Ahmetoglu

UCL Interaction Centre
University College London
London, UK
yoana.petrova.15@ucl.ac.uk

Anna L. Cox

UCL Interaction Centre
University College London
London, UK
anna.cox@ucl.ac.uk

Duncan P. Brumby

UCL Interaction Centre
University College London
London, UK
d.brumby@ucl.ac.uk

Abstract

As a result of transitioning to remote work during the COVID-19 lockdown, many knowledge workers had to quickly invent new ways of managing work while working entirely from home. The research community currently lacks insights about how such a stressful and disruptive event might impact how people plan their work. To start filling this gap, the current study explored how knowledge workers adjust their planning routines, strategies and tools during this unprecedented global crisis. It consists of longitudinal weekly interviews with 15 participants during the UK's COVID-19 lockdown. Early stage analysis of 68 interviews is presented. Findings suggest that workers experienced planning challenges that prevented them from keeping their existing planning routines. We describe those planning challenges together with the new planning routines, strategies and tools that participants developed during this period. These insights are discussed in terms of future research directions that can benefit both workers and organisations to support the transition to productive remote work.

Author Keywords

Remote Work; COVID-19; Pandemic; Planning; Support Tools; Time Management; Knowledge Work; Productivity; Personal Task Management

Permission to make digital or hard copies of part or all of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for third-party components of this work must be honored. For all other uses, contact the owner/author(s).

Copyright held by the owner/author(s).

Introduction

The COVID-19 pandemic brought about a global crisis that suddenly required almost *everyone* to work *entirely* from home. While in the past a few might have chosen to partly work from home [10], here almost all knowledge workers must; some of these people might not have before. This was, therefore, a moment in time in which a large number of people had to change the way that they were working and planning their work.

A rapid switch to remote work from home can lead to planning challenges for at least two reasons. First, research on remote work indicates that remote working requires more careful work planning than working from an office [12]. Entirely remote workers are in charge of their schedules. There are many opportunities for distractions and interruptions at home, for instance cell phones [22] and work and non-work time can easily be blended in the absence of careful planning [2, 7].

Second, evidence shows that, when in stressful periods, office workers can get disappointed with their planning strategies [13] and planning tools [14]. Studies show that the plans knowledge workers in the office create do not withstand the pressure of deadlines and busy periods [9]. Knowledge workers might therefore experience planning challenges during the COVID-19 lockdown, for instance, they may struggle to keep to their planning routines, to implement their strategies, and to use their tools.

The sudden switch to remote work during a stressful event like the COVID-19 lockdown has brought many challenges for many people. Here we focus on the challenges that people experienced in planning their work and adjusting and changing planning strategies during the COVID-19 lockdown. The present study aimed to examine how a period of disruption influences knowledge workers' planning. We

aim to answer the two research questions. First, to find out whether there are any challenges knowledge workers experience to implement their planning routines following the sudden move to remote working created by the COVID-19 pandemic. Second, to find out how workers adjust their planning to address those challenges.

There are two main contribution of this work. First, we describe three main challenges knowledge workers experienced when implementing their planning routines during a period of disruption. Second, we offer insights about how those challenges resulted in changes to workers' planning routines, strategies and needs for planning tools.

Related Work

Over the first half of 2020, the COVID-19 pandemic resulted in many knowledge workers having to rapidly switch to remote working from home to prevent the virus from spreading. While many have experience of working partly at home, this was often for only part of the working week and not entirely based at home [10]. The pandemic changed this: all work was from home, everyday.

Planning refers to decisions about which tasks to perform and how to prioritize them under time constraints [8]. Work planning is important for productivity because it helps workers feel accomplished and meet the goals they set to achieve each day [17]. Research on planning is important to help remote workers manage time in a flexible way. Workers who work remotely from home experience more job flexibility and are able to fit personal tasks around work tasks [12]. However, they are also at risk for work family conflict when work home boundaries become blurred [21].

Planning consists of routines, strategies and tools. Routines are a regular practice of implementing strategies to create plans. For example, filling daily task reports through con-

versational agent [15]. A planning strategy is a strategy or method designed to achieve efficient completion of tasks. For example, breaking down tasks, estimating duration of tasks, starting the day with most difficult task first [13, 19]. Planning tools are digital or non-digital medium used as a placeholder for plans [4]. For example, pen and paper diary or task lists.

It is known that knowledge workers experience challenges in keeping a planning routine [14, 13], making realistic plans [6], and sticking to these plans [9, 20]. Most days, work does not go according to plan: a diary study that measured how accurately researchers in academia plan their daily tasks found that they left 34% of work incomplete by the end of the day [1].

In addition, people may also experience challenges in finding appropriate planning strategies and tools. Evidence suggests that they change their planning strategies and tools over time, especially when in difficult periods [13, 14]. In [14], the authors interviewed 26 academics and found that planning tools were abandoned when participants in their study got very busy. Similarly, in [13] retrospective survey study, it was shown that users change their strategies and tools during periods of change in their job or tasks because people experience new needs over time which their existing tools and strategy do not support.

The results of previous research therefore suggest that knowledge workers are likely to experience planning challenges during a stressful change event: they may struggle to keep to their planning routines, to use their tools and implement their strategies in the new situation. We need to better understand those challenges and changes in planning over time in order to provide better planning support in future situations of disruption.

The current study consists of semi-structured interviews repeated over the course of several weeks. By a longitudinal design, we are able to observe changes in planning and the respective preceding and following events. Our design also minimizes chances of misremembering. The study is in progress and we present results from an early stage analysis.

We chose to interview academics and early career researchers in academia because they do a variety of tasks and they have autonomy over their work schedule at home. The findings generalize to other groups of knowledge workers with similar job demands, for example, who spend time in meetings, collaborations and focused work. It also has to be noted that most academics and researchers have some experience with working from home. The findings, therefore, generalize to groups with similar prior remote work experience.

Method

Participants

Fifteen participants took part in the study. They were academics and early career researchers at UK and US universities (3 × lecturers, 2 × post docs, and 10 × PhD students). They were all working from home during data collection as a result of the COVID-19 pandemic. Participation was voluntary. The study was approved by the UCL Ethics Committee.

Data Collection

Lockdown in the UK started officially on 23 March 2020. However, all participants in this study were working remotely by 16 March. Data collection began on 6 April. Semi-structured interviews were conducted each week for an average period of five weeks with each participant. Eight participants joined during the second week of April. The re-

maintaining seven participants joined gradually in the following weeks. Each week there was at least one participant joining the study. In this way, we could obtain insights about different stages of the pandemic. All participants had joined the study by the beginning of June.

All interviews were conducted online through Microsoft Teams and were audio recorded. Interviews investigated how participants planned their work, whether they used new planning strategies or tools, and the challenges experienced to keeping a planning routine at home. The researcher re-listened to the interview recording of each participant between each interview and noted down questions to follow-up on.

Data Analysis

Included data in this report consists of 68 interviews with 14 participants who have completed the five weeks of weekly interviews. These data are based on 14 hours 30 minutes of recordings. On average, each participant participated in five weekly interviews (range from 4 to 6) with an average duration of 13 minutes each.

Recordings were transcribed with a transcription software and edited manually by the researcher to correct for mistakes. Data were then thematically analysed with Nvivo 12 [5].

Early Stage Findings

We report on part of our early findings which can be of most interest to the research community at the symposium. We present two main findings. First, we describe three main challenges that disrupted participants' planning routines. Second, we show how participants developed new routines, strategy and tools in response to those challenges.

Challenges to keeping a planning routine

Participants' usual activities were entirely disrupted during the first several weeks of remote work. Majority did not make any work plans during this period of disruption. Participants reported experiencing three main challenges to keeping to their planning routines: (1) they were often distracted by the news and sudden increase in email, (2) they suffered bodily pain issues and experienced lack of motivation to work, and (3) they were frequently exhausted from working long hours, child care and household duties. We describe each of these findings below with examples from the data.

First, participants reported being distracted by news and media, and losing focus to work. This distraction resulted in disruptions in their existing planning routines.

P7: It was just a burnout with the emails and all the messages, and I couldn't get anything done because it was just so much information at the same time [...] And plus, I was checking the news quite a lot. It was quite hard to actually focus on my tasks. And if something was coming up, an email or someone texting you and getting in touch, that had the priority. I was not making a plan.

Second, maintaining a planning routine was challenging because participants were temporarily in strict lockdown: they were not allowed to go outside of the house more than once a day for short exercise. The lockdown led to complications such as physical pain due to lack of work space, and lack of motivation to work.

P2: The motivation in the morning is probably the hardest. There is nowhere to physically have to be. I don't have to be anywhere by 9:00AM [...] Initially, I was in constant physical pain because I wasn't in a nice ergonomic position. I

got to do 20 minutes of work and then I'd be like needing to stand up and move around and stretch.

Those who lived by themselves felt socially isolated and struggled to find motivation to maintain their usual planning routine. Participants reported forgetting to follow their plans because they could not remember to refer back to them. As P5, shared: *I find it harder to get motivated to work from home [...] I do have a to-do list in front of me, but it's very easy to forget to refer to it.*

Third, as a result of a long lockdown, we found that participants were frequently exhausted from working long hours, child care and household duties. Participants who lived with their families, for example, were overwhelmed by the various additional duties at home. P6 was a young parent of two children who would not usually work from home. He found himself working at different times than usual, often very early in the morning or late in the night.

P6: I'm watching the kids run around while I talk to you at the moment. So I have one eye on them, one on the screen. [...] There is no time to plan, it's just doing. I squeeze in bits of work when I find a moment [...] Yesterday I woke up at 5am to try to get some work done [...] and I do a little bit of work when the kids go to bed, but I'm just sick, exhausted that I want to go to sleep.

Participants who lived with their families were also affected by fatigue. P9 was living with her parents and extended family. She was working on a strict schedule in addition to some extra household duties which she was managing to do in her work breaks. She thought that she might be neglecting spending time with her family and her downtime.

P9: For the past six weeks, I've been working every day for eight hours. And I think I was talking to a friend yester-

day and she said that I am way too organised. I've been thinking about that. Maybe I'm too invested in work and I've been neglecting other things. I know that there is not much to do other than work. Maybe I should slow down.

Changes in planning routines, strategies and tool needs

The challenges to keeping a planning routine described in the previous section resulted in changes to participants' planning routines, strategies and needs for planning tools. Participants reported experiencing three changes with regards to their normal work planning: (1) disengagement from their usual planning routines (2) trying out new planning strategies, and (3) discovering a need for tools that allow better integration of work and non-work time in their plans. We describe each of these findings below with examples from the data.

First, participants reported a general disengagement from their usual planning routines at the beginning of the lockdown period. Eventually, participants started planning again. However, many participants changed the contents of their plans: events got cancelled and new tasks emerged as a result of moving work online.

P13: I couldn't travel anywhere. We're just stuck at home. So I had more time. But at the same time, I also got more work because I was supposed to start data collection for one of my studies literally the week before lockdown, which, of course, couldn't go ahead.

Participants shared that they had changed the nature of the daily tasks in their plans. For example, they planned fewer social interactions.

P4: Previously, I was taking into account more social interactions and breaks [in my plans], for instance, I would give

myself the first half an hour to catch up. Now, it's just breakfast and lunch.

How quickly participants started planning their work again depended on how disrupted their work initially was. For some, it took months to go back to planning. For example, two months after the start of the lockdown, P6 made first efforts to plan ahead beyond the current day.

P6: This morning has been my first day of planning. I'm making a new timeline for my research. And it's kind of trying to find more time and work longer days, essentially.

For others, it took just several weeks to start thinking about a work plan. Participants who had more time on their hands than before could spend more time thinking about planning and they created more plans.

P1: In the first week it was mostly me lying down with no motivation to do anything until I got tired of that. And then I decided that I need to start working [...] I feel like I have more real time to plan because I can't meet friends or do stuff outside the house, there are no exhibitions to go. Everything I have to do is in the house. So I feel the need to plan a lot more and know what I have to do and when. Just because it's easy not to do it and go downstairs and play with my grandma.

Second, we found that some participants tried new planning strategies. For example, P5 shared that she was finding it hard to get motivated to work at home. During the first week of lockdown, she expressed that she found herself distracted. In the following week, she developed a new strategy of time estimation together with her daily plans.

P5: I'm trying a new approach after having a conversation with [my partner] about how much I want to achieve and in

how much time as I am realizing in the past days that if I had three things on my list, I got one and a half done. That is because I underestimated the time it would take me [...] now I estimate how long different things will take.

To illustrate with another example, P14 felt overwhelmed by her deadlines. Usually, she would plan overall goals day by day in her diary. Then, during week 4 of the interviews, she decided to start planning week by week as well, to leave more time between her meetings and to start allocating time for each daily task in her plans.

P14: Last week I was so sad that I couldn't handle anything. And I decided that I should take immediate steps to overcome my stress [...] I tried to plan very well ahead, week by week, and also allocating time for each task so I know what I have to do and I just work on that. [...] Before I would also schedule meetings 2-3 days in advance, now I said I will meet with them next week.

New strategies emerged organically through reflection about how productive participants felt. P1 experienced a disturbing loss of productivity and motivation. As a result, she was only able to work on easier short tasks. The following week, she reported that she had discovered a new strategy of focusing on smaller tasks. She actively started to break down her longer tasks into smaller ones, and she found it useful for taking the psychological pressure off.

P1: So that kind of thing is what I'm going to be doing because I know I can do a small and easy task and it makes me feel accomplished.

Third, we found out that participants discovered a need for tools which allow better integration of work and non-work time in their plans. They felt that their work and non-work time were intertwined. They had to plan differently in the

sense that they had to combine and integrate work and non-work plans. Some participants started to schedule time off for exercise and to talk to friends online.

P11: I'm now scheduling the workout, the cooking time and anything, really, because I want to make sure that I'm doing everything I can each day.

Some participants were actively trying to find new tools for planning work and non-work time. They imagined a tangible to-do list which would remind them of their new routine at home.

P8: I was working very efficiently but I didn't do any exercise or stretching. I feel emotionally, psychologically, I feel unhealthy. But I have been thinking how I should combine the workout together with my work. [...] I have a to-do list on my yoga mat and one on my laptop. I need to combine them somehow into something tangible that I can't ignore.

Discussion

The results of this longitudinal interview study reveal the real disruption experienced by knowledge workers as they transitioned to working from home during the COVID-19 lockdown. Many participants reported being unprepared for a rapid switch to remote work and took over a month to regain their focus. We discuss two main findings from an early stage analysis. First, participants reported a disengagement from their usual planning routines because of media distractions, lack of motivation, and lockdown fatigue, and exhaustion due to long hours of work. Second, we found that eventually participants started planning their work again but this time the contents of their plans were different, they tried new planning strategies and experienced new planning tool needs.

Participants were challenged to keep their planning routines. We think this disengagement from planning is likely a common occurrence when people's circumstances change or when they get busy [14]. However, disengagement from planning meant that participants experienced even more time pressure than before. This suggests that disengagement is not an ideal coping strategy within the natural cycle of finding a new planning strategy. It is rather a reaction to the detriment of individual's wellbeing and productivity as well as to the best interest of the organisation. It becomes extremely important to try to prevent such complete disengagement by finding alternative strategies. Even a simple planning routine can be helpful during times of disruptions, change and extreme time pressure [17, 18, 16].

The results of this interview study also suggest that people started to plan new kinds of events and worked around new types of limitations in their planning. This led to changes in the contents of their plans: in the duration and nature of their tasks and in the control they had over their time. We believe that they developed new planning strategies in response to these changes linked to the evolving situation [13]. New planning strategies emerged organically through trial and error. These findings suggest that organisations should facilitate the process of finding the most suitable new strategies as early as possible rather than let employees find them organically. When individuals find new strategies themselves, there will be an individual differences influence and it is likely that the organic is not the most optimal one, most of the times.

Participants developed several new planning strategies: increasing the accuracy of planning, breaking down big tasks into concrete shorter tasks and complementing levels of planning (e.g. adding together daily and weekly planning), etc. It is possible that workers go through these stages and

experience needs to develop these strategies consistently over the course of their careers, especially when in periods of change and disruption. Future research needs to examine the appropriate technology to develop such strategies effectively. Ways forward may include interventions such as reflective goal-setting. It is a technique effectively applied in software engineering for helping workers identify new planning strategies [19]. An intelligent assistant can combine reflective goal-setting with provision of resources and ideas about how to set up different planning tools for different strategies, and with workshops focused on exploring available tool functionalities and tool configurations. Research can then learn from workers who use such an intelligent agent to develop and sustain new planning by observing the interactions between personality, context, strategies and tools. Over time, the gathered data will allow evidence-based recommendations about which strategy and tool is best suited for different individual contexts.

An interesting implication of this study concerns how organisations approach remote workers' productivity. Most concerns so far have been about how to sustain productivity levels of remote workers, and to monitor and measure their performance [11, 3]. This research has been motivated by the concern that remote workers' performance is difficult to measure and manage. The findings of the current study suggest that another way to supporting productivity and preventing burnout is through helping employees to more quickly, easily and efficiently find new planning strategies and tools. Organisations should shift the focus from sustained productivity to supporting productivity through planning interventions and more support tools.

There are several potential concerns about privacy of personal information that will be important in the future when supporting remote workers' planning. Planning tools usually

gather sensitive personal information about the tasks people do, when and how they execute them. These same data provide mechanisms for effective planning. Organisations would need to use the data to make sure that employees develop efficient planning in order to prevent burnout. However, how should technology mediate this process while avoiding misuse of personal data and keeping privacy concerns at bay?

Future research

Data collection will be completed by exit interviews with all participants planned to be conducted in July 2020. The aim of the exit interviews is two-fold. First, to provide opportunity for additional questions based on the early stage analysis and to clarify points. Second, to present each persons' data back to them and to check that the analysis has arrived at sound conclusions about each individual experience.

Acknowledgements

This work was supported by a studentship from the Division of Psychology and Language Sciences, University College London. We'd like to thank all the participants who were willing to take the time to share their experiences of adjusting to the COVID-19 lockdown with us.

REFERENCES

- [1] Yoana Ahmetoglu, Duncan P. Brumby, and Anna L. Cox. 2020. Time Estimation Bias in Knowledge Work: Tasks With Fewer Time Constraints Are More Error-Prone. In *Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems (CHI EA '20)*. Association for Computing Machinery, New York, NY, USA, 1–8. DOI : <http://dx.doi.org/10.1145/3334480.3382917>

- [2] Blake E Ashforth, Glen E Kreiner, and Mel Fugate. 2000. All in a day's work: Boundaries and micro role transitions. *Academy of Management review* 25, 3 (2000), 472–491.
- [3] NBKDE Bailey and Nancy B Kurland. 1999. The advantages and challenges of working here, there, anywhere, and anytime. *Organizational dynamics* 28, 2 (1999), 53–68.
- [4] Ann E Blandford and Thomas RG Green. 2001. Group and individual time management tools: what you get is not what you need. *Personal and Ubiquitous Computing* 5, 4 (2001), 213–230.
- [5] Virginia Braun and Victoria Clarke. 2006. Using thematic analysis in psychology. *Qualitative research in psychology* 3, 2 (2006), 77–101.
- [6] Roger Buehler, Dale Griffin, and Johanna Peetz. 2010. The planning fallacy: Cognitive, motivational, and social origins. In *Advances in experimental social psychology*. Vol. 43. Elsevier, 1–62.
- [7] Marta E Cecchinato, Anna L Cox, and Jon Bird. 2015. Working 9-5? Professional differences in email and boundary management practices. In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems*. 3989–3998.
- [8] Brigitte JC Claessens, Wendelien Van Eerde, Christel G Rutte, and Robert A Roe. 2007. A review of the time management literature. *Personnel review* (2007).
- [9] Brigitte JC Claessens, Wendelien Van Eerde, Christel G Rutte, and Robert A Roe. 2010. Things to do today...: A daily diary study on task completion at work. *Applied Psychology* 59, 2 (2010), 273–295.
- [10] Ravi S Gajendran and David A Harrison. 2007. The good, the bad, and the unknown about telecommuting: Meta-analysis of psychological mediators and individual consequences. *Journal of applied psychology* 92, 6 (2007), 1524.
- [11] Ravi S Gajendran, David A Harrison, and Kelly Delaney-Klinger. 2015. Are telecommuters remotely good citizens? Unpacking telecommuting's effects on performance via i-deals and job resources. *Personnel Psychology* 68, 2 (2015), 353–393.
- [12] Richard F Griffiths. 2003. *Time management in telework and other autonomous work environments*. Ph.D. Dissertation. ProQuest Information & Learning.
- [13] Mona Haraty, Joanna McGrenere, and Charlotte Tang. 2015. How and why personal task management behaviors change over time. In *Proceedings of the 41st Graphics Interface Conference*. 147–154.
- [14] Amirrudin Kamsin, Ann Blandford, and Anna L. Cox. 2012. Personal Task Management: My Tools Fall Apart When I'm Very Busy!. In *CHI '12 Extended Abstracts on Human Factors in Computing Systems (CHI EA '12)*. Association for Computing Machinery, New York, NY, USA, 1369–1374. DOI : <http://dx.doi.org/10.1145/2212776.2212457>
- [15] Everlyne Kimani, Kael Rowan, Daniel McDuff, Mary Czerwinski, and Gloria Mark. 2019. A Conversational Agent in Support of Productivity and Wellbeing at Work. In *2019 8th International Conference on Affective Computing and Intelligent Interaction (ACII)*. IEEE, 1–7.

- [16] Sander Koole and Mascha van't Spijker. 2000. Overcoming the planning fallacy through willpower: effects of implementation intentions on actual and predicted task-completion times. *European Journal of Social Psychology* 30, 6 (2000), 873–888.
- [17] Andrew K MacLeod, Emma Coates, and Jacquie Hetherington. 2008. Increasing well-being through teaching goal-setting and planning skills: Results of a brief intervention. *Journal of Happiness Studies* 9, 2 (2008), 185–196.
- [18] André N Meyer, Thomas Fritz, Gail C Murphy, and Thomas Zimmermann. 2014. Software developers' perceptions of productivity. In *Proceedings of the 22nd ACM SIGSOFT International Symposium on Foundations of Software Engineering*. 19–29.
- [19] André N Meyer, Gail C Murphy, Thomas Zimmermann, and Thomas Fritz. 2019. Enabling Good Work Habits in Software Developers through Reflective Goal-Setting. *IEEE Transactions on Software Engineering* (2019).
- [20] William M Newman. 2004. Busy days: exposing temporal metrics, problems and elasticities through diary studies. In *CHI 2004 Workshop on Temporal Issues in Work*. Citeseer.
- [21] Katarzyna Stawarz, Anna L Cox, Jon Bird, and Rachel Benedyk. 2013. "I'd sit at home and do work emails" how tablets affect the work-life balance of office workers. In *CHI'13 Extended Abstracts on Human Factors in Computing Systems*. 1383–1388.
- [22] Bill Thornton, Alyson Faires, Maija Robbins, and Eric Rollins. 2014. The mere presence of a cell phone may be distracting. *Social Psychology* (2014).