Topophilia, Placemaking, and Boundary Work: Exploring the Psycho-Social Impact of the COVID-19 Work-From-Home Experience

JANGHEE CHO, Department of Information Science, University of Colorado Boulder, USA
SAMUEL BECK, Department of Information Science, University of Colorado Boulder, USA
STEPHEN VOIDA, Department of Information Science, University of Colorado Boulder, USA

The COVID-19 pandemic fundamentally changed the nature of work by shifting most in-person work to a predominantly remote modality as a way to limit the spread of the coronavirus. In the process, the shift to working-from-home rapidly forced the large-scale adoption of groupware technologies. Although prior empirical research examined the experience of working-from-home within small-scale groups and for targeted kinds of work, the pandemic provides HCI and CSCW researchers with an unprecedented opportunity to understand the psycho-social impacts of a universally mandated work-from-home experience rather than an autonomously chosen one.

Drawing on boundary theory and a methodological approach grounded in humanistic geography, we conducted a qualitative analysis of Reddit data drawn from two work-from-home-related subreddits between March 2020 and January 2021. In this paper, we present a characterization of the challenges and solutions discussed within these online communities for adapting work to a hybrid or fully remote modality, managing reconfigured work-life boundaries, and reconstructing the home's sense of place to serve multiple, sometimes conflicting roles. We discuss how these findings suggest an emergent interplay among adapted work practice, reimagined physical (and virtual) spaces, and the establishment and continual re-negotiation of boundaries as a means for anticipating the long-term impact of COVID on future conceptualizations of productivity and work.

CCS Concepts: • **Human-centered computing → Empirical studies in collaborative and social computing**; • **Social and professional topics → Socio-technical systems**.

Additional Key Words and Phrases: work from home; WFH; boundary theory; humanistic geography; COVID-19; work–life balance; future of work

1 INTRODUCTION

The COVID-19 pandemic has fundamentally changed how we live and work. Due to public health lockdowns and social distancing policies, the home has become not only a place of leisure where employees rest and spend time with their families, pets, or housemates, but also a place for home

Authors' addresses: Janghee Cho, janghee.cho@colorado.edu, Department of Information Science, University of Colorado Boulder, Boulder, Colorado, USA; Samuel Beck, samuel.beck@colorado.edu, Department of Information Science, University of Colorado Boulder, Boulder, Colorado, USA; Stephen Voida, svoida@colorado.edu, Department of Information Science, University of Colorado Boulder, Boulder, Colorado, USA.

PACM on Human-Computer Interaction, Vol. 6, No. GROUP, Article 24. Publication date: January 2022.

24

offices, home schools, and home gyms. While these new uses for the home might be temporary and last only during the course of the COVID-19 pandemic, the last year's experience has also led people to express willingness to adapt to new ways of living at home [112]. For instance, work-from-home (WFH) may continue to be the new normal for many information (or office) workers. According to a recent survey[1], most office workers (83%) want to have the option to work from home even after COVID-19; as a result, some companies will allow their employees to keep working from home even after public health measures are lifted [27]. Furthermore, climate change might well lead to other kinds of biological or weather-oriented disruptions necessitating remote work at scale again in the future [54, 65].

WFH is not a new concept for office workers, although co-located work in office spaces has still been the primary mode of work in this domain [35, 84]. Information and communications technologies (ICTs) have been considered a crucial factor in enabling organizations to adapt remote work as a practical mode of work [77, 89, 111]. Previous research has studied the experiences of remote workers, including mobile workers and teleworkers, to inform the design of technologies to better support work from non-office locations. While individual, organizational, and societal issues related to remote work have been discussed in this literature, individuals' WFH experiences during the COVID-19 pandemic have led to unique challenges. Despite previously acknowledged advantages of WFH (e.g., reducing commuting time, avoiding stressful office environments, greater flexibility in juggling non-work commitments), during COVID, people have been *forced* to stay at home to work (against most people's wishes) even though their home might not be suitable for non-domestic purposes, such as work or study. While remote workers who worked from their home prior to the pandemic also faced challenges, they typically chose this modality of work of their own accord and in response to their own needs (e.g., work–life balance [89]). Thus, previous research, especially in human development or business disciplines, has often focused on challenges associated with an organization's culture, social interaction, or career development, and has generally approached these issues from an organization-centered perspective rather than a perspective that centers on remote workers' everyday experiences and working environments (i.e., "How do people telework?" [8]).

Given the fact that employees with more diverse backgrounds were required to work from home during the pandemic, we argue that the COVID-19 WFH phenomenon is an opportunity to investigate both what people do to construct an office setting in their home and how they cope with challenges in remote work from a uniquely employee-centered perspective. These individuals, who generally lacked prior experience working primarily (or exclusively) from home, needed to reconstruct their homes as work-friendly places and their virtual work offices as home-friendly spaces [4]. As these boundaries between home and work spaces have become blurred, people have had to modify or redefine what home means to them—not only physically, but also mentally. Given that domestic environments are unique and complex—and sometimes contradictory to design requirements common in the office workplace [11, 105]—we believe that the locational shift of work provides an opportunity to think critically about the role of digital technologies used in both co-located and remote work. Beyond technologies that support organizational development from a business perspective, our work applies a human-centered design approach [82] to the COVID-19 WFH experience.

Furthermore, previous studies showed that many office workers in traditional office environments have trouble managing their time due to highly demanding workloads and internal or external interruptions in office settings [42, 74]. Information workers often feel that they use their time

ineffectively, leading to frustration, stress, and anxiety. A large body of human–computer interaction (HCI) and computer-supported cooperative work (CSCW) research has examined how to improve productivity and wellbeing in the context of these traditional offices (e.g., [7, 45, 60, 79]). Although an individual worker's uniqueness and the contextual background of an office space are considered in the design of technologies for supporting productivity (e.g., [58, 73, 80]), most other research focuses on the individual worker's productivity rather than their perceptions, attitudes towards, or values embedded in a place, or the relationships among household members or presence of everyday possessions in a space. Many people have reported that managing their time when working from home to maintain prior levels of productivity is a particular challenge, resulting in burnout, elevated stress levels, and work–life conflicts [1, 2, 17, 95, 106].

Home is a material and an affective space, shaped by everyday practices, lived experiences, social relations, and emotions [15, 88]. To reimagine how digital technologies can support WFH, we argue that understanding people's relations with a place, their possessions, and co-present individuals in the space should take precedence. From the perspective of humanistic geography, a place is a phenomenological aspect of what it means to be human [108]; how humans experience and interact with their surrounding environment shapes who they are and how they behave [30, 33, 109]. To understand people's WFH experiences, previous research has focused on how people negotiate boundaries between work and non-work practices at home [81]. Here, we focus our investigation on how people enact boundary work as a *placemaking practice* [5, 29, 108]—how people respond to and make meanings of home, as a place, through their spatial feelings and ideas—to dig more deeply into these pandemic-specific WFH challenges. Furthermore, because individual workers negotiate with the sociomaterial components of the home when re-making their workspaces in this hybrid context, there is a need to discuss the design of technologies to support their productivity and well-being in the WFH setting [23].

As with infrastructural inversion [16], when the invisible infrastructures associated with office work (e.g., assuming a co-located, office-based work modality; treating the presence of distinct domestic and work environments as "normal") suddenly break down, an opportunity is revealed for interrogating the underpinnings of these assumptions, investigating the nature of work–life balance in information work, and projecting forward for the future of productivity and work. In this study, we draw on boundary theory [81, 116] and humanistic geography [107–109] as theoretical lenses to allow us to understand remote workers' WFH experiences (including challenges and breakdowns) during the COVID-19 pandemic, and, more specifically, to identify how the reconfiguration of the home as a workspace has influenced people's approach to and strategies for adopting a WFH mindset over the course of the last year. We ask the following research questions:

- **RQ 1:** *How have people negotiated boundaries between their living spaces and working or studying spaces?*; and
- **RQ 2:** *How have people made use of boundaries to reshape their sense of place in the home as a living space and a working/studying space?*

To answer those questions, we present results of a qualitative study of 11 months of Reddit data from two WFH-related subreddits: r/workfromhome and r/WFH. We report on three primary contributions. First, our work provides empirical findings of remote workers' experiences during the COVID-19 pandemic, including benefits and challenges of WFH and the strategies employed to rearrange home environments to support this new mode of work. Our analysis reveals a diverse range of WFH experiences based on resources available to remote workers. Our empirical findings allowed us to examine how WFH experiences are (dis)similar with those previously reported in remote work settings. Second, by applying boundary theory and humanistic geography as theoretical frameworks guiding the analysis of our data, we identify six types of boundary work

(spatial, temporal, psychological, sensory, relational, technological) that redditors working from home are managing. Our analysis specifically examines the dynamic nature of boundary work based on how home space becomes a *place* [50, 108]; that is, those instances in which redditors expressed a mixed sense of place and attachment when discussing their WFH situation. Third, we conclude with a discussion of the role of technology in negotiating work–home boundaries in the WFH setting and examine how people's experiences shifting to WFH over the last year can suggest future conceptualizations of productivity and work.

2 RELATED WORK

In this section, we provide a theoretical background of boundary theory and humanistic geography and outline existing work on remote work and work–life balance, with a primary focus on the HCI and CSCW literature.

2.1 Telework in the Pre-Pandemic Period

WFH is not a new mode of work for office workers. Due to an oil crisis in the 1970s, the concept of teleworking was introduced to suppress oil consumption [46, 89]. While the initial interest in working remote from the office was motivated by events at a national scale, this new mode of work was adopted—to greater or lesser extents—because it met individual and organizational needs [8, 9, 46]. Remote work has been encouraged for office workers as a means of instantiating family-friendly work policies. Companies also adopted remote work to reduce operational costs and to increase employees' productivity. As mobile and groupware technologies have evolved and been adopted more and more broadly in the workplace, remote work has been promoted by an increasing number of organizations. For instance, personal computing and ICT applications allowed employees to work from any place and at any time [77, 89]. (A more detailed history of and background about remote work is beyond the scope of this article, but can be found elsewhere, e.g., [8, 34, 51].)

Previous research has also investigated the benefits and pitfalls of remote work and identified the types of people for whom this modality of work might be most beneficial. These studies found that office workers received advantages from remote work: namely, they are provided much greater flexibility in managing their time and location, resulting in the improvement of productivity and work–life balance [8, 36, 39, 51, 111]. However, they also found that remote workers struggle to "switch off" from work due to the high degree of permeability between work and home domains [36]. Thus, remote work has also become associated with drawbacks, such as overwork, stress, social isolation, and conflict with families [9, 39, 46, 64, 103]. Since WFH was, until the arrival of the COVID pandemic, largely a discretionary choice for employees and organizations, there was a clear but limited range of employee personas and job functions that were perceived as being a 'good fit' for WFH. For instance, telework was an option for some professionals from the telecommunications or IT industry, a few academics, and clerical workers who mainly deal with information work through ICT [8, 89]. People with a high degree of self-discipline also tended to self-select into conducting their work remotely [9, 46, 89]. However, as more people have been forced to work at home not because of individuals or organizations' needs but for public health purposes during the COVID-19 pandemic, in this research, we compare previous teleworkers' experiences with ones within the current WFH setting.

2.2 Boundary Work within the Home and Work Domains

Post-industrialization, home and work have been viewed as independent domains where people spend time to accomplish distinct tasks [81]. However, much research shows that home and work

consistently influence each other, such that the interdependence between them should be taken into account for understanding work experiences and behaviors (e.g., [48, 100]).

Boundary theory has been used as a lens for understanding the interdependence of how people maintain, negotiate, and transition across the lines between home and work [6, 81]. Boundary theory was originally developed by Zerubavel, a cognitive sociologist, to explain how people perceive the world by drawing lines (or boundaries) [116]. He introduced two antithetical minds of experiencing our social world; while the *rigid mind* is preoccupied with boundaries and emphasizes clear distinctions and order, the *fuzzy mind* seeks to eliminate barriers and ambiguity. He also introduced a hybrid—the *flexible mind*—which leverages aspects of both the rigid and the fuzzy mind to more gracefully manage transitions across social world boundaries (i.e., mental plasticity). Nippert-Eng extended these mindsets in terms of boundary into work and home domains [81]. She argued that home and work are *experiential*, not merely physical realms, because these places are perceived and understood by mentally and physically drawing boundaries, guided by historically ingrained socio-structural and spatio-temporal modes. So, these boundaries shape our sense of who we are and how we are supposed to behave in each realm. People continually work toward some level of *integration* or *segmentation*, enacting, reinforcing, and modifying ideas of what is work and home and how they should relate (i.e., *boundary work*) [81]. This boundary work consists of continuous and dynamic activities, enacted through our everyday choices, practices, or principles and interaction with objects in place and with people. Therefore, boundary theory is an appropriate theoretical framework for understanding remote workers' experiences.

The concept of the integration–segmentation continuum in boundary work [81] has been conceptually developed across a body of research literature. For instance, Clark developed border theory with a focus on work–family balance [26]. In this theory, Clark explicated how people manage and negotiate the tensions between work and family, incorporating temporal, physical, and psychological forms of a border. Depending on the degree of permeability, flexibility, and blending between two domains, Clark argued that the boundary can be either strong or weak. (Allen et al. offer more details about this conceptual component of border theory [3].) Ashforth et al. [6] focused on individuals' different roles in home and work and the transitions among these roles. They argued that the higher contrast in role identities people have the less easily people can transition between these roles. They proposed that rituals or ceremonies of separation and integration can be effective in transferring from work to home (and vice versa). By enacting rituals and routines, boundaries between home and work can be (re)structured to facilitate the transition [39, 99].

Boundary theory has also been used to explain how remote workers set boundaries to maintain work–life balance [28]. For instance, Salazar investigated how university employees who often work at home define boundaries between home and work and how they decide the space in which they want to work [92]. She presented five types of boundary work (*space, electronic, psychological, roles, time, working tasks*) that shape the work environment at home and remote workers' relationships with family members. Thomson [104] identified three types of boundary work (*physical, temporal, and psychological*) from a study of remote workers' home offices based on Clark's border theory [26]. While the segmentation approach to boundary work—distinguishing the psychological mindset between home and work in order to improve work performance and quality of life—is dominant in the remote work literature, people sometimes also apply an integration approach. In a few studies, remote workers reported that they preferred to manage their work and personal responsibilities simultaneously [39, 44, 63]—for instance, parents who switch between employee and mother/father roles to take care of their children or accomplish some housework while working from home.

Work and home used to be two different domains that were physically and temporally separate, and thus boundary theory has been considered a way to understand how individuals navigate between and across independent physical spaces. Given the current WFH situation, we believe that

our work can extend the application of boundary theory to the unique situation of how people create, maintain, or reshape boundaries when embedding the workspace within the home and to inform the (re-)design of both technology and policy to accommodate the 'new normal' of the information workplace, post-pandemic.

2.3 Application of Boundary Theory: Technology and Remote Work

As collaborative and groupware technologies have been considered indispensable support for remote work, HCI and CSCW scholars have investigated remote workers' experiences and the roles of digital technology in the remote work setting. While contemporary productivity and groupware software provides flexibility and freedom for information workers to manage their time by overcoming spatial and temporal boundaries between the home and the traditional office, it also makes it difficult to detach from work due to the social pressure and expectation that people can be "always-on" through technology [76]. To better design information technology for work–life balance, Cecchinato et al. [20] investigated how people use their email to set boundaries. They found that people used "micro-boundary strategies," separating work from non-work time by using features of email applications (e.g., scheduled send/receive windows, delayed send). Fleck et al. [38] also conducted a survey to understand how people use digital technology to negotiate boundaries between work and non-work activities. Other recent studies showed that technology can be leveraged as a cue to support people's boundary work, not only in the context of remote work, but also for work/school–home life, in general [71, 86, 115]. In the tradition of these prior studies, we also aim to discuss the potential role of individual and groupware technologies in remote work from an individual's perspective by exploring reported boundary work practices utilized during the COVID-19 pandemic. So, in this study, we ask: **how do people negotiate boundaries between their living and working spaces as a result of shifting to mandatory work-from-home due to pandemic lockdown and social-distance policies (RQ1)?**

2.4 Humanistic Geography, Topophilia, and Home

To better understand people's boundary work during the COVID-19 pandemic, we also draw on humanistic geography as a theoretical and methodological lens, helping us to understand people's boundary activities for building, maintaining, or reshaping a sense of place and the sense of attachment to those places (i.e., topophilia) in the home.

The philosopher and geographer Yi-Fu Tuan introduced humanistic geography, a philosophical approach to geography, in order to understand how humans experience and interact with their surrounding environment [107]. In contrast to a positivist perspective on space and its relation with humans, he put people's spatial feelings and ideas at the center of geography to understand how space forms people's perceptions, attitudes, and values, and how these experiences shape the space as a humanized space that has a meaning (i.e., a sense of place). Based on this perspective, he coined the term *topophilia*, the affective bond between people and place or setting [109]. Ogunseitan found that people's quality of life is associated with the degree of topophilia [83]. This result may not be surprising because topophilia can be formed by a sense of place, familiarity with a place, and emotional attachment to a place, along with visual and aesthetic appreciation and positive bodily experiences of a place [109].

While space and place are words that are part of common usage in everyday speech, in humanistic geography they are important concepts for unpacking the relationship between humans and topophilia [108, 114]. *Space* generally refers to a more abstract concept that describes a measurable, objective space without a substantial meaning [29, 108]. On the other hand, *place* embodies the experiences and aspirations of a people. (Creswell provides more detailed descriptions of the two concepts [29, p. 2].) Harrison and Dourish [50] also introduced a similar distinction between place

and space as a design component in technology. So to speak, space is transformed into place as it acquires definition and personal meaning. Therefore, topophilia can be constructed by placemaking activities in which people create or modify the meaning of space(s).

In general, people perceive home as a place that evokes feelings of privacy, security, comfort, and familiarity as well as shapes a sense of self and family [81]. So home is a very exemplary place in which people feel a sense of attachment and affect (i.e., topophilia) [108]. Since the home has taken on the additional role of remote office for information workers during the COVID-19 pandemic, implanting a sense of office into the home is a necessary process for remote workers. By adopting a humanistic geography perspective, Wilhoit conducted interviews with office workers to understand the opposite situation: how and why office workers engage in placemaking activities to make their office space have a home-like atmosphere [114]. Wilhoit found that making a sense of home at the office is an important way for people to maintain a sense of their authentic selves in the context of their work. For instance, "nesting" is a common practice in which individuals decorate their workspace to make it feel more homey and personal. To understand placemaking practices, Ciolfi et al. [24] suggested a sociomaterial perspective [68], explaining how people enact a particular set of activities related to material, social and experiential elements. Building on these insights, we aim to investigate remote workers' WFH experiences with a focus on their placemaking activities. Based on an understanding of remote workers' boundary work, we ask: **how is a new or revised topophilia of the home (as a place containing a variety of sociomaterial entities) shaped using a new sense of place and attachment into a combined home-and-work place (RQ2)?**

3 METHOD

To understand remote workers' *in situ* WFH experiences, in this study, we draw on data collected from the online community Reddit. Reddit is an online discussion forum where people share and discuss their experiences using two basic features: posts and comments. Reddit is organized into thousands of subcommunities called "subreddits," each focused on a specific topic or interest[2]. Unlike other social media platforms such as Facebook or Twitter, Reddit is an anonymous online community in which people don't expose any identifiable personal information such as name or email address unless they choose to self-disclose this information. Given the anonymity of Reddit, users discuss and disclose their personal experiences in a genuine manner [40, 56, 98]. As a result, data from Reddit has been used to explore people's perceptions, experiences, and discourse on a variety of topics (e.g., [19, 41, 43, 62, 67]).

There are alternative ways of exploring people's WFH experiences, such as interviews. While interviews might allow us to collect more in-depth information about people's everyday experiences, interviews would necessarily happen at a much smaller scale and across a more limited sample of information workers. Further, people might be reluctant to share their personal experiences and frustrations about WFH with others, especially if recruited through social networks or if the stories had particularly personal content. As such, in this study, we chose to use publicly accessible, voluntarily shared Reddit posts as the corpus for conducting a qualitative study about peoples' experiences with WFH. Observing how people were voluntarily talking about their WFH experiences in the context of a global online community gives us access to a breadth of perspectives that aren't limited to predetermined interview prompts or protocols.

3.1 Statement of Positionality

Data from digital media has become part of a way to understand what people do and how they enact their social lives [87]. To explore remote workers' everyday lived experiences of WFH, we

---

[2]Reddit FAQ https://www.reddit.com/wiki/faq retrieved May 2021

not only observe collected data from Reddit, but also participated in these forums in an effort to understand the WFH phenomena and its impact from the perspective of the remote workers (i.e., an emic approach [12]). This approach allowed us to "understand the way in which a language or culture is constructed and individuals' daily lives" [12, p. 167]. Given our reflexive practice, leading us to select and shape the data to be presented and interpreted, the positionality of the authors may be an important factor in this work. All three authors are based in the United States and have also been participating in WFH since 2020, but each has a different cultural background and different household configuration. The first author is an international student living with his wife and one infant in a duplex house. During a day, he often switches his role between an employee/student and a father/husband to perform his tasks. The second author is an undergraduate student living in an apartment with four other roommates. They have a shared space and ample room to work at home, as well as a deck that can be used for working outside. The third author is a faculty member at an R1 university, living with his wife and two young children in a single-family home. Rather than nullify our knowledge and experiences, our embeddedness in this WFH environment necessitated a constant conversation with our research data (i.e., reflexivity) to elicit its meaning [22].

3.2 Data Collection

To select suitable subreddits for our research goals, we searched for subreddits in which people mainly discuss tips for WFH situations and share their experiences of WFH. The first author qualitatively selected the sample subreddits based on two criteria: (1) the number of total members is more than ten thousand members and (2) the subreddit's information (i.e., "About Community" descriptor) and posts are aligned with the research goal. Based on these criteria, we selected r/workfromhome ("A Reddit community for those who work from home! Helpful tips and discussions on productivity, the lifestyle, and making it all work!") and r/WFH ("Welcome to 'WFH - Working From Home,' the subreddit dedicated to those of us who work from home, be it for yourself or a company. Learn tips and tricks to make yourself more productive, avoid distractions and generally make your experience a more positive one.") subreddits as our sample. These two subreddits introduce themselves as communities for people who work from home and discussion spaces in which people can share and discuss productivity, lifestyle, and so on[3].

By using the Python Reddit API Wrapper, we scraped 1,852 posts and 8,299 comments published in r/workfromhome and r/WFH between March 2020 and January 2021. We decided to collect data posted from March 2020 because many companies implemented their WFH policies after the World Health Organization declared COVID-19 to be a pandemic in March 2020[4]. Data scraped included the title, body, and URL of each post, its timestamp, and the total number and content of comments. According to our Institutional Review Board, no human subjects approval is necessary for this kind of study due to the public nature of the data; however, we did take steps to protect the privacy of the redditors represented in our corpus. We did not collect any further information about Reddit users to mitigate privacy-related concerns. In addition, we also redacted any potentially identifiable information from the quotes and excerpts included in this paper.

Once we created the initial corpus of posts from these two subreddits, we made the final dataset for our analysis by excluding some posts based on the following criteria: (1) posts that ask about a new remote working position, (2) posts that share an external resource (e.g., news, blog) without any additional personal reactions or their own opinions, (3) deleted posts, and (4) posts that ask or

---

[3]https://www.reddit.com/r/WFH/ & https://www.reddit.com/r/workfromhome/ retrieved May 2021
[4]WHO Director-General's opening remarks at the media briefing on COVID-19 https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19—11-march-2020 retrieved May 2021

share unrelated information that is out-of-scope for this project (e.g., sharing fun pictures, asking questions about micro job companies such as Appen, etc.).

Subreddit	Num. of sampled posts / Num. of corpus posts	Num. of sampled comments / Num. of corpus comments	Num. of members
r/workfromhome*	371/1,085	2,216/4,645	14.1K
r/WFH	296/767	2,102/3,654	13.9K

Table 1. Description statistics for two subreddits (*March 2020 data had been archived by the community moderator at the time of data collection, so data from this subreddit was collected dating back to April 2020.)

3.3 Data Analysis

We conducted iterative inductive qualitative coding [22] to analyze remote workers' WFH experiences during the COVID-19 pandemic. All authors met regularly throughout the entire analysis process, and revised the codes together, referencing specific excerpts from the corpus, as needed.

Before starting the open coding, the first and second author conducted *structural coding* [93] over the corpus in order to become familiar with and roughly organize the data. In this analytic pass, we identified WFH challenges, benefits, and strategies across posts and comments, and labeled the basic purpose of each post (e.g., *sharing information* or *asking questions*).

In the second coding pass, the first and second author used a hybrid *descriptive*, *in-vivo*, and *process* coding approach to inductively identify themes of challenges, benefits, and strategies [93]. We used descriptive and in-vivo coding techniques to elicit a hierarchically structured list of subtopics within our broad categories of challenges, benefits, and strategies, using a combination of redditors' own language (*in-vivo* coding) and our interpretation of shared experiences (*descriptive* coding). We also conducted *process* coding to identify conceptual activities, especially as they related to boundary work. We employed memoing to capture emergent observations about redditors' experiences in WFH, highlighting surprising or unexpected quotes and constructing explanatory narratives using these quotes to elicit themes when these narratives consistently appeared in the data (e.g., WFH challenges: *issues with family members*, *productivity*, *not enough space*, *missing office routines*, *no longer having any desire to work*; WFH strategies: *mimicking an office atmosphere*, *making family rules*, *using a candle or natural lights*, *mindfulness*). We made these inductive codes as detailed as possible to capture potential nuances in the online discussion, and we used qualitative data analysis software[5] to organize and share these codes across the research team.

Next, the entire research team employed the *eclectic* and *focused* coding techniques [93] using mind mapping software[6] to collaboratively categorize our inductive codes. We merged and grouped low-level codes during this analytic phase, informed by the boundary theory and humanistic geography literature. For instance, there were a series of disparate themes related to the home environment (e.g., *issues with families*, *the lack of physical space from home*, *everyday objects from home*); we merged them into one higher-level theme (i.e., Section 4.2.3), focusing on understanding the tension between existing home's sense of place and new practices at home.

---

[5]MAXQDA Analytics Pro, https://www.maxqda.com/
[6]Coggle, https://coggle.it/

4 WFH EXPERIENCES DURING THE COVID-19 PANDEMIC

We present redditors' WFH experiences based on the three categories derived from our structural coding: (1) WFH benefits, (2) WFH challenges, and (3) WFH strategies. Our approach and goal is not to generalize redditors' experiences in WFH or to evaluate the efficacy of their practices in WFH, but to include diverse lived experiences as much as possible in order to identify how remote workers negotiate boundaries between their living and working spaces. Therefore, in this section, we aim to provide "an analytical account of events and activities as they occur" [14, p. 374] based on our qualitative analysis.

4.1 WFH Benefits

Our findings indicate that the most prominent benefits people receive from WFH are escaping the office environment, improvements in their productivity, and improvements in their lifestyle. WFH benefits that redditors shared are very similar with those identified prior to the pandemic. For instance, one of the core themes highlighted by two subreddits' data is the freedom and flexibility of being able to self-dictate the boundaries around WFH, which was reported as a benefit of remote work in the previous literature (e.g., [9]). Redditors enjoyed the individuality granted by working on their own terms and within intentionally constructed boundaries by designing home office spaces in a certain way, avoiding a commute—which freed up time that could be spent with family—and shifting to a flexible work schedule. For these redditors, these benefits of WFH resulted in better day-to-day mental health, lower stress, and greater overall life satisfaction. The following explicit benefits were most prominent in the data.

4.1.1 Escaping the Office Environment. While some redditors missed the office's sense of place and routine, some reported feeling relief and gratification from being able to escape the office as a place of work. Redditors reported that they enjoyed avoiding lengthy commutes, which freed up more leisure time and provided time to establish morning and evening routines (e.g., *'you have more flexibility, you don't have the stress of the daily commute, and you can pretty much work hours that suit you'* (r/workfromhome)). Some redditors also reported satisfaction from being able to dictate facets of their office environment such as organizing it as they pleased rather than being confined to a company-built office environment and avoiding their co-workers' interruptions in the office. Redditors spoke of the joy of not having to deal with any of these inconveniences. For instance:

> *'I always hated going into the office, dealing with all the distractions and pointless chit chat. I am more of an introvert and prefer not having to deal with the stress of office gossip, lunch meetings, xmas celebrations all of which feel mandatory to show you are a "team player."'* (r/WFH)

4.1.2 Productivity and Company-Related Benefits. For redditors who found the environment of their office particularly distracting—whether due to obnoxious coworkers, noise, or inconvenient meetings—productivity enhancements were often reported (also resonant with prior studies [89]). Having the ability to self-dictate routines and work space designs and the ability to get work done in less time due to the autonomy of working from home allows these individuals to be more productive in WFH. For instance, some redditors reported drastic improvements in their work efficiency, getting more done in less time, and feeling more satisfied as a result of their own self-directed home office environment and schedule.

> *'I can plan a full day worth of work and private things and get the same amount of work done and private chores/appointments in 1 day whereas I used to need 1 or 2 weeks for getting all the private things done. So much more enjoyable with healthier food and no commute as stated above.'* (r/WFH)

4.1.3 Lifestyle Benefits. Redditors working from home who enjoyed the ability to autonomously control the contours of their work lives detailed many lifestyle benefits. The ability to manage additional free time in the mornings and evenings, interruptions, and productivity at home, led to more leisure time with family, more time to establish routines, more time to work on personal projects and hobbies, and more freedom to exercise. Choosing when and how to work gave redditors more freedom and flexibility to choose when and how to spend their remaining time. Redditors demonstrated great agility in balancing their work schedules to achieve these lifestyle benefits. For instance, one redditor said that she enjoys her WFH with family:

> *'My husband and I both WFH in separate offices. We usually break for lunch together (and try to squeeze in a short walk through the neighbourhood if there's time) and catch up about our days. We also always have afternoon tea around 2pm - whoever is not in a meeting makes tea and brings it to the other person with a small snack. Definitely keeps me sane and is a highlight of my day!' (r/WFH)*

> *'I can manage my schedule as I see fit. If I want to start a little later one day and my schedule allows for it, I can, and I can work later. If I want to take a few hours mid day to take care of something, I can, because I am not mandated to work within strict hours and can catch up on what I missed later in the day. I can take my dog for walks throughout the day.' (r/WFH)*

As described by the above redditors, WFH offers a level of flexibility that a 9-to-5 office routine cannot offer. A remote worker who prefers a more flexible schedule can allocate work time as they see fit rather than working strict hours, and more freedom is offered to take the kids to school and relax around the house.

4.2 WFH Challenges

Resonant with other studies of remote work (e.g., [8, 39, 51, 64]), our findings also revealed two fundamental issues that remote workers face: the difficulty of maintaining typical levels of productivity at home and the loss of quality-of-life. We found five main challenge themes related to these two issues that uncover nuances specific to the pandemic WFH context.

4.2.1 "Hamster in a Cage": The Loss of Social Interaction and Mental/Physical Health Issues. Redditors reported that they have suffered mental health problems due to a lack of social interaction, remaining isolated from the outside world during the COVID-19 pandemic. While some redditors said they have been enjoying the independence of WFH (Section 4.1), people who work alone in small homes feel lonely, inadequate, and experience mental exhaustion. Health-related issues are not unique to remote work as a result of the pandemic and have been identified previously [9, 46, 89, 103]. However, the lack of preparation for the shift to working from home, the reduced level of physical activity caused by lockdowns, and mental health issues caused by social isolation and stress all combined to amplify health concerns to a greater level than has been studied previously. One redditor said *'When work is contained in a small space where you also "live," it gets difficult to leave work stress at work'* (r/WFH).

Mental health problems, in particular, often made redditors feel unmotivated and unproductive in their work:

> *'..I know I'm not being nearly as productive as I could be. Every day feels like a repeat of yesterday, and while I trust it won't be like this forever, I worry that I'm going to slump into this feeling long-term and it will effect [sic] the quality of my work. I miss talking to people, and zoom and phone calls just aren't doing it for me anymore.' (r/workfromhome)*

While people had online meetings with friends, family members, and coworkers, they still felt isolated without face-to-face interaction. One redditor said *'I am more overthinking, started to have fears and doubts...I don't know but maybe because of the less interaction I get from people physically'* (r/workfromhome). Because people were required to stay in a single place for their work and home lives, they began feeling depressed when waking up in the morning, at the start of their day. As a consequence, WFH ruined the existing home's topophilia. For instance, one redditor described their sense of place that: *'I feel like a Hamster in a cage'* (r/workfromhome).

Staying in a single place also contributed to a sedentary lifestyle and caused physical health issues for some:

> *'I am in meetings almost 8 hours a day. When in the office I am running from room to room, walking at lunch and such. I think I realized it may be from sitting almost 8 hours a day.' (r/workfromhome)*

In addition, redditors also shared other health-related issues such as insomnia or bad eating habits.

It is known that remote workers often feel more pressure to demonstrate their performance, and they worry if they cannot meet management expectations [47]. In the WFH setting during the COVID-19 pandemic, people reported suffering not just from this type of "normal" work-related pressure but also mental and physical health issues.

4.2.2 Failures in Time Management and Productivity Issues. Time management is still the hardest part of WFH for the redditors in our corpus. Due to the "always-on" norm for remote workers, detaching from work mode after working hours has been a particular challenge [76]. Many redditors shared similar stories about working many more hours than before. *'When I was at the office, I was all too happy to leave at the end of my work shift. Now I find myself working upwards of 10 hours a day. I feel like I can't stop.'* (r/workfromhome)

Redditors failed to make time for short breaks or cleanly ending their work because of difficulties in maintaining the boundary between home and work. One redditor said *'the whole house becomes a one huge office and the work seemingly never ends and I never get to leave the office, which means imminent burn out and a breakdown'* (r/WFH). Some also complained about the difficulties of concentrating on their work due to digital clutter, making it challenging to maintain regular work hours.

> *'When I personally go on to Instagram (for example) I tend to sit a pretty long time (most of the time) without even noticing it. For me it's like 5 minutes but it was really around 30 minutes. Social Media is a huge time waster when we are talking about being productive.' (r/WFH)*

Because the traditional 9–5 workday doesn't suit every employee equally, the freedom to autonomously dictate work schedules has been significantly beneficial to some remote workers (Section 4.1). However, having too much flexibility negatively impacted others:

> *'..in the past 5 weeks my productivity has gone down. I have tasks to do with more flexible timelines but I am struggling to find the effort to get things done. I am extremely disappointed in myself.' (r/WFH)*

Failures in time management demotivates people, leading to a higher level of stress and the loss of interest in work. It is likely that the WFH situation imposes more burden for remote workers to manage work hours than did remote work in the pre-pandemic setting.

4.2.3 Challenges from Home. Since remote workers have to create a work environment at home, they also encounter various challenges with family and the spaces their homes afford. The common difficulty redditors shared was the lack of physical space to make a dedicated workspace at home.

Unlike pre-pandemic remote workers who are able to set up a dedicated space for their work, our findings showed that many people attempted to create a new workspace within their existing personal or family space such as a bedroom, living room, or kitchen. Due to the lack of space, redditors struggled to increase their productivity or to maintain work–life balance:

> *'I live with roommates so don't really have a dedicated space in the house other than my bedroom.…..Of course I see the benefits of working from home but I notice it just doesn't feel like working from my bedroom. My bed is right desk to the desk and when I get tired it makes me want to lay. My productivity hasn't been the same.' (r/workfromhome)*

> *'..hard for me to turn off "work brain" and distance myself from it. It feels more like I'm living at work rather than working from home.' (r/WFH)*

It is difficult for these redditors to disconnect from the sense of place of their living space; they continue to perceive their home as a place of rest and relaxation rather than a place of work. One redditor mentioned that *'Your home is a place of rest, relaxation, and distractions. Generally speaking, a home is not a place designed for maximum deep work and productivity – it's a jungle.'* (r/workfromhome). In a similar way, taking on two different roles (work and home) in a single space results in these roles becoming blurred. For instance, one redditor said they feel like they need to care about their household chores during the workday:

> *'Stuff I need to get done around my apartment is always on my mind and since I live alone there's no one to chip in.' (r/workfromhome)*

Working from home can become even more challenging when the workspace needs to be shared with other family members. When family members stayed at home together during work, they often disturbed the work atmosphere:

> *'I started working from home after the covid started but now it is becoming difficult for me to focus because we live in a 1 bedroom apartment and with the kid. It's almost impossible to concentrate. Also I am now facing [a] lot of issues in online meetings, I usually keep on mute, when require unmute - blast with the answer and then mute again. Because I don't know when would my kid start screaming or when would my spouse will turn on TV etc.' (r/workfromhome)*

> *'...honestly having her [spouse] around all the time has had an overall sucky effect on the quality of my WFH experience. She's an avid cook and I'm constantly smelling dishes while trying to work. Also there's something about seeing your spouse during the day all the time that kind of spoils the whole professional mindset that I get into whenever I start working.' (r/workfromhome)*

The disturbances were not limited to other household members. Redditors also got distracted by everyday objects that provide comfort. For instance,

> *'I live in a bachelor studio with no dedicated work space (I have no desk) and am really struggling to find a balance between work space and personal space. I hop between my bed and couch and my table (which is the best to work from) and feel like I'm too "comfy" to work.' (r/workfromhome)*

4.2.4 Missing Benefits from the Office and Navigating New Organizational Challenges. WFH not only means the loss of a company-provided space to work, it also eliminates the office's sense of place comprising office routines, co-workers, technology, and general workplace atmosphere. While some redditors spoke of the joy of not having to deal with the downside of the office

environment (Section 4.1.1), some said that they were struggling to come up with good alternatives for collaborating with their coworkers and missing infrastructure specific to the office.

> 'There is screen sharing and whiteboard apps and snipping tool - but I have not found a fun way to whiteboard brainstorm with a coworker while we clean up a process and share a vision of what we are trying to say.' (r/WFH)

These redditors also missed small-talk with their coworkers and mundane sensory experiences from the office (e.g., office chatter, buzzing machines, lighting, etc.). The lack of these experiences made it difficult for them to focus on their work:

> 'I'm lonely, frustrated, and having a hard time getting work done. I really miss the office. I have plenty of work friends in the office, and I enjoy spending a few minutes here and there catching up with them.' (r/workfromhome)

> 'My biggest problem is this sort of feeling like I'm not really at work. Because I'm not dressed in clothes and shoes for office, I don't have a ton of people working around me, or the sounds of the printers and coffee machines buzzing in the background, my brain doesn't really catch up that I'm on shift and have to work.' (r/workfromhome)

> 'I miss the office. The activity, the background noises, the joking and camaraderie, being able to ask a quick question of the person next to me, dropping a candy bar on a random co-workers desk for no reason.' (r/WFH)

This resonates with prior research on remote work [46]; a recent study about remote workers also found that losing the opportunity to informally collaborate with colleagues was ranked the most negative effect of working from home [1].

Our data also shows that WFH brings about a new challenge that would not have existed pre-COVID: Redditors shared some uncomfortable new policies imposed by their employers. For instance, companies forced employees to run tracking systems to check their work progress and to prevent procrastination.

Additionally, many new hires had difficulty engaging with team members and learning about work and company culture—practices that are part of *situated learning* [66]:

> 'I just recently graduated from college and started a job that I had interned in before. I liked the job a lot then but I'm having a very hard time finding it engaging now. It's very hard to learn how to do the right things when people are walking me through it over the phone not showing me how to do it.' (r/workfromhome)

> 'I recently joined a company and started working from home…,found it hard to ask questions and meet people and feel connected really. I feel like I get stuck on things all the time and have to constantly ask repeated questions.' (r/workfromhome)

Due to the online setting, new hires struggled to learn the company's culture, to build relationships with coworkers, and to learn new skills or knowledge.

4.3 WFH Strategies

4.3.1 Time Management. How to spend time wisely is one of the important concerns for remote workers. We found that redditors discussed and shared various techniques, tools, and strategies to manage time well, thus increasing productivity. Redditors emphasized the importance of scheduling or making clear and specific goals. The time management techniques redditors shared are not new and are already well-known and widely used for managing time. For instance, redditors mentioned that making a list of daily tasks is important either at the end of or the beginning of the workday.

> *'When working from home, you must prepare for the day ahead. You don't want to be caught like a deer in headlights when your alarm clock rings.'* (r/workfromhome)

> *'Take some time at the end of your workday. Look through the tasks of the day and check off everything that you have accomplished.....With your list more or less completed, take a moment and think about what your day is going to look like tomorrow.'* (r/workfromhome)

Making a to-do list helps remote workers not only efficiently accomplish their goals, but also boost their mental health. One redditor said that *'having a to-do list relieves you of stress that may be caused of you having to think about your tasks so you won't end up forgetting about them and that just causes unnecessary stress'* (r/workfromhome). To improve time management skills, some redditors recommended the Pomodoro technique: committing a block of time to focus on one task, traditionally 25 minutes in length, separated by short breaks [25]. By leveraging the Pomodoro technique, redditors said they were able to set a more office-like schedule and ensure that regular breaks were taken to avoid burnout.

> *'I have had great success with using the Pomodoro technique of timing blocking to break my work down into small, manageable chunks. I find I procrastinate less and tend to accomplish a lot more throughout the day.'* (r/workfromhome)

Redditors also introduced some modified versions of the Pomodoro technique; for instance, one redditor shared their experiences with a music-based Pomodoro. Another redditor shared a novel interpretation of their 5-minute breaks after finishing a task: *'take a 5 minute celebration break! walk outside, watch a motivational YouTube video, or scroll Instagram..'* (r/workfromhome). Some redditors also shared their journaling or tracking experiences that helped them to be aware of how they have spent their time and to improve their time management skills.

While most redditors put an effort into managing their time and tasks to maintain an office-like schedule, one unique aspect of WHF time management is that house chores and other non-work activities are also included in the workday. Some redditors changed between work and home roles rapidly in a bid to boost their productivity in both domains. For instance, one redditor said that *'I feel like the 5 minute rule applies more at home than anywhere else....go do whatever stupid thing you were gonna do, laundry/dishes/make oatmeal/hard boil some eggs/repair the bird feeder, etc'* (r/WFH). As people became more flexible with spending their time, they incorporated household chores into their scheduled tasks. Pratt also found that some remote workers take advantage of a full 24-hour day to optimize or time-shift work conducted at home [89]. To manage the role transition between work and non-work tasks, one redditor recommended that routinizing a pattern between work and house chores is helpful in the role transition.

> *'It will help allocate your time between work and other aspects of life better. For starters, you can follow your regular working hours. Once you've adapted, you can make the necessary adjustments that would be beneficial to you.'* (r/workfromhome)

4.3.2 Making a Better Work Environment at Home. Another common WFH strategy is to create a better environment, including the home's physical space, qualities, and affordances through a material and sensory experience (i.e., placemaking) [88, 91]. Making a dedicated workspace at home is the most straightforward and easiest way to set up a work-from-home environment. Fonner and Stache [39] found that this is the predominant strategy for remote workers. Allen et al. [4] also found that having a dedicated home workspace was positively associated with work–life balance. Many redditors shared this viewpoint, reporting that having a space to separate work from non-work life would help maintain balance, because it allows detachment from work mode physically and psychologically. Some redditors made rules disallowing family members to enter their dedicated work space in order to create a more office-like atmosphere. As mentioned earlier

(Section 4.1.2), having a dedicated workspace helped some redditors to be more productive and organized:

> 'In my experience, having a good and separate home workspace is crucial to get you in the "working zone". It can be just a small separate corner specifically designated for this and that your mind can associate with working hours and not with leisure time.' (r/workfromhome)

> 'I don't think that mixing "home" and "office" is a good idea... My advice is to separate work and home. Have hours when you focus on work and hours when you are "at home". Having a dedicated space where you work is a start.' (r/workfromhome)

However, not all remote workers have enough space to create an independent workspace within their home (Section 4.2.3). So redditors also shared tips about how to shape work environments in everyday home spaces based on their own experiences. For instance, some redditors rearranged their furniture and others installed a partition to make a provisional office space to separate work from the home atmosphere (e.g., *'my workspace is in my bedroom, so i got high dressers to put at the foot of my bed-it kind of blocks the workspace and keeps it out of my eyespace.'* (r/WFH)). To create a more office-like environment, some redditors also encouraged people to reduce digital clutter and non-work objects in their workplace. For example, one redditor wrote *'If you have decided this is where you want to set up, turn it into a proper work setting. Clear everything away non-work related before you start and put everything back after you have finished for the day'* (r/workfromhome). In an effort to re-create the office's sense of place, one redditor even turned on office-like sounds:

> 'I also just went on youtube today and found some videos of ambient office sounds - remains to be seen if it makes me feel more productive but I don't dislike it so far!' (r/WFH)

While some redditors recommended taking away everyday objects from the workplace, others shared the opposite suggestion: they enjoyed a bit of home-related fun by bringing everyday objects into their workplace (e.g., *'You can also look forward to getting a few fun items for your desk that you ordinarily wouldn't bring into work'* (r/workfromhome). For instance, they brought toys, plants, and candles to make a hospitable and cheerful atmosphere:

> 'In my case, the scented candles have worked very well since the aromatic stimuli are very efficient in making me feel good, relaxed, and stimulated. Relaxing colors around you are also a very important factor that's sometimes overlooked.' (r/workfromhome)

> 'I also have a lot of plants in the nearby corner to gaze at which lifts my mood.' (r/WFH)

Wilhoit [114] also found that people brought personal things in the office to increase not only a sense of belonging but also a sense of attachment to the space. To make a more comfortable, personal space, redditors shared some tips to decorate their work space. Some redditors took it one step further and also made use of sounds and lights to achieve the appropriate sensory environment.

> 'Fill your space with as much natural light as you can. It's really wonderful to be working but not feel like you're trapped.' (r/workfromhome)

> 'I put the TV on downstairs to get a little sound in the house so it doesn't feel so empty.' (r/workfromhome)

Rather than replicating the office atmosphere at home, redditors accommodated the new WFH situation by accepting personal tastes into their home office. Some redditors even leveraged the different spaces and atmospheres in their home. For example, one redditor said they did not work in a single workplace but also in other living spaces:

'What I do is I move my work station around the house whenever I feel I'm at my lowest and done that multiple times already.' (r/workfromhome)

'At the beginning it was really hard for me to stay focused but now it's a bit easier, sometimes I'll work from bed using a laptop tray and as long as I'm not in my pajamas I can still keep a good work flow.' (r/workfromhome)

Our findings showed that technology can also be used to make a better virtual environment, another cue for boundary work. In our data, technology, including infrastructure, hardware, and software, was used to differentiate between work and home domains [20, 38, 39, 92]. For instance, redditors used a KVM switch or an additional external hard drive to separate work and personal computing environments.

4.3.3 Make Routines, Rituals, or Rules. Making a daily routine, rules, or rituals is heavily discussed as an effective strategy to deal with WFH challenges. When a series of activities are repeated, they become a routine that helps define boundaries for home and office (*'setting routines as "boundaries" to signal start and end of the workday'* (r/workfromhome)). Many redditors said that having some routinized patterns help separate work mode from home mode, thus increasing productivity and motivation. The most common routines people shared were *the start-up routine* before starting work and *the shut-down routine* after finishing work. By enacting a series of activities, people attempted to switch their mode from home to work. For example, as some redditors no longer commuted to work, they pretended to leave for either their home or their workplace:

'I am currently trying a simple routine. When I am ready to start work, I head out the front door for a quick 10-minute walk around my neighborhood. When I get back home, I put on some coffee and wait for it to brew while casually browsing my phone. After the coffee is ready, I pour a cup for myself and my wife and head to the office. As you can see, this is almost mimicking a commute along with grabbing a coffee before sitting down to work. I find that a 10-minute break to be alone and outside helps re-align my thoughts. It also adds some distance from myself and my home. It allows me to refresh my brain, ready to take on the workday ahead.' (r/workfromhome)

'I'm trying to build in a short "commute" into my morning routine: (1) Shower and put on some "outside-appropriate" clothes.... (2) Stop by the kitchen for a beverage (first coffee of the day…). (3) Play some of my favorite music (like I would have on the drive to work) and enjoy at least one full song while I let my computer boot up.' (r/WFH)

'I don't have the ability to separate my space because I live in a small apartment, but I have come up with some tricks to help me transition between work and evening. At the end of work, my partner and I do a quick 30 minute workout. Nothing crazy, just something to literally move our bodies a little each day.' (r/WFH)

Many redditors said walking around their neighborhood helped them reset their brain. Having an exercise routine, praying, or meditating are also practices that people enacted before starting work.

Some redditors wore specific clothing to assist in transiting their mindset from home life to work. For instance, one redditor said that *'I have noticed that when I get dressed for work and put a little makeup on (just to go to the other room to work) it sets the 'working tone' for the entire day. When the work is done, I change into something cozy and signal to my brain and body that is either workout or chillout time.'* (r/workfromhome). We found that some redditors wore more casual clothes to take advantage of WFH, but others intended to wear more formal clothes or put on makeup in order to pretend as if they were in the office.

To maintain an office-like schedule, some redditors followed the same routine as when they spent time in the office.

> 'I think you should treat as working from home as same as working in your office. Follow the same schedule as you normally would. Wake up on time, have a nice breakfast, get dressed, and go to work, even though its just your living room.' (r/workfromhome)

Before the COVID-19 pandemic, remote workers were also able to delineate their time between work and non-work by relying on temporal routines [39]. While having more flexible working hours, instead of needing to work from 9-to-5, some redditors still followed a set routine.

> 'Maintaining a set schedule is helpful. I begin work at the same time each morning (10:00), break for lunch sometime between 12:00 to 1:30, short break sometime between 3:00 and 4:30. Break again for food around 6:00 and call it quits between 8:00 and 9:00. I don't work later than 9:00, typically, unless jobs have been scarce and I absolutely have to.' (r/workfromhome)

Some redditors also created family rules to avoid family conflict. For instance, they set regular and specific break times to serve as "family time" or negotiated rules of etiquette for how and when family members can approach one other to talk during the day. One redditor mentioned that they used a cup as a sign for interruptibility:

> 'Use different colored post it's or different colored objects to identify your "status". So for us, we each have a green, red, and yellow cup: The green cup is "I'm kind of working or waiting on something, I can talk" The yellow cup is "I'm working but if you need to ask/show me something I can pause for a second." The red cup is "I'm really busy and really focused, I can't talk or do anything other than this right now."' (r/WFH)

4.3.4 Acknowledge Vulnerability: Be Kind to Yourself. Redditors encouraged those who are struggling in WFH situations to be kind to themselves. In addition to providing practical tips, redditors also gave and received emotional support within the community. They reminded others not to be too hard on themselves and not to expect to maintain the same level of productivity every day.

> 'I've found that most of my expectations of working from home didn't hold up in reality. And that's okay. Just wanted to remind you to be flexible and not let it stress you out if things go a bit differently.' (r/workfromhome)

> 'you do not need to be "more" productive, damn during these times you don't even need to be "as" productive as you [were] before......Just do your best and don't stress eventually things will get better.' (r/workfromhome)

Redditors suggested that having enough breaks and finding personal ways to balance work and life are important to be sustainable in the long run.

> 'When it comes to WFH you can't beat yourself up, it's much more productive to take advantage of your environment to encourage yourself to do things well. Take small breaks (pomodoro style) and reward yourself with things that will help energize you. Stretching, reading, drawing, etc. it's a personal choice.' (r/workfromhome)

> 'My best advice for the time being is if you're feeling burnt out, stop working. Take some time off. The work will be there when you get back, and you'll be able to do a better job because you're refreshed.' (r/WFH)

Also, rather than maintaining a tight schedule, they proposed having a more *resilient* attitude about time and productivity. One redditor suggested that having a big milestone and a to-do list is

helpful to keep making progress, but one should acknowledge that productivity is not always the same:

> 'It ebbs and flows for sure!...I am currently in a slump and trying to get through a training but I know in a week or two I am going to be slammed with other things. What is helping me is to plan out my major to-dos for the week, always leaving time for those last minutes tasks that get added.' (r/workfromhome)

In addition, redditors put an emphasis on a lifestyle based on holistic personal wellness: paying attention to physical and mental health and social wellness.

4.3.5 Find New Types of Social Interaction. Redditors shared a variety of experiences about how they coped with loneliness and engaged in social interactions. Social isolation has already been identified as one of the main issues in remote work [21, 97] (also see Section 4.2.1). Since COVID-19 forced most information workers to work from home, redditors reported adopting new practices and norms to maintain social ties with their coworkers [72]. Redditors said that they stayed connected to their colleagues through online communication tools such as video conferencing. They also transitioned formal and informal social events to virtual platforms; for example, they set up regular coffee chats with their colleagues to simulate "water cooler" conversations. Some redditors who self-identify as working in human resources shared their remote social events experience and tips for hosting these kinds of events. Redditors also encouraged others to meet new people around the neighborhood and through online communities to maintain their social life.

Redditors, especially those who lived with family members, considered these family members to be their new coworkers. Because they shared the same workplace at home, they engaged in small talk to vent about frustrations from work and spent breaks together. While some other redditors reported struggling in dealing with family when working-from-home (Section 4.2.3), family members can be supporters and co-workers, and can help remote workers improve their work-from-home environment.

> 'Since the onset of the lockdown, my kids have been always dragging me to dance with them. So far, since they started doing it, I've felt more energized. They also monitor my food and water intake. They make sure I eat on time and drink enough water. Now, my worry is what I'll do when they go back to school.' (r/workfromhome)

5 DISCUSSION

In our findings, we identified benefits to and challenges of WFH, and how redditors coped with challenges by enacting boundary work to shape attitudes, feelings, and perceptions of their home office. Below, we offer reflections that build on those findings and theoretical frameworks to discuss theoretical and design implications. First, we summarize what kind of boundary work redditors leverage to adopt a WFH mindset and discuss a dynamic of boundary work in the WFH setting. Based on redditors' boundary work, we discuss how they redefine their sense of place to construct a new topophilia of the home. Then, we envision a possible domestic technology that might better support remote workers' well-being and productivity. Finally, we discuss a need for alternative notions of productivity and work for a new mode of remote work in the post-pandemic era.

5.1 Aspects of Boundary Work During the COVID-19 Pandemic

Our findings revealed six types of boundary work that shape remote workers' placemaking practices in WFH situations. Combining previous researchers' definitions of each kind of boundary work [26, 39, 81, 92, 104, 116] with our empirical findings, we present descriptions and examples of each aspect of boundary work present in our data (see Table 2).

Table 2. Themes of Boundary Work from Reddit Data

Themes	Descriptions	Examples
Spatial	Enacting boundary work through the spatial realm	• Creating a dedicated space for WFH • Rearranging furniture or using a partition • Working at different places in the home
Temporal	Leveraging time as a resource or material to negotiate boundaries between work and home	• Splitting up time to "block out" tasks • Adhering to an office-like schedule • Leaving all times more multi-purpose
Psychological	Making invisible boundaries by shaping a perception, attitude, or feeling related to a certain sense of place	• Getting dressed or applying makeup • Enacting a series of activities (i.e., routines or rituals) • Spending time/walking outside • Introducing everyday objects to or removing them from the workspace
Sensory	Enacting boundary work through sensory appreciations (i.e., felt bodily experiences) by leveraging artifacts or environments	• Turning on the TV, radio, podcasts, or music • Adding plant(s) to the workspace • Utilizing natural light • Making a place feel more personal and special with art, decorations, and so on
Relational/Social	Making an intangible boundary shaped by other household members' presence/absence or by undertaking role transition(s)	• Establishing rules among family members • Perceiving family members as co-workers • Managing work-related and non–work-related tasks separately (acting as an employee versus as a household member, such as partner or parent)
Technological	Making a virtual or infrastructural boundary by leveraging technology	• Using two or more devices • Using a hardware switch to transition between working and personal apps and/or data • Using software to set up and maintain virtual partitions on the computer • Using tracking or journaling technologies to manage time

Space and time have previously been identified as basic resources for boundary work; they provide the explicit dimensions to either *segment* or *integrate* home and work domains [81]. Since the home has become the main workspace during the COVID-19 pandemic, people report leveraging additional cues to more effectively negotiate the boundaries between home and work [4]. Our findings also showed that redditors enact different types of boundaries to maintain, modify, or reconstruct the home's sense of place to serve their "multiple selves" in a single environment.

Conversations among redditors also revealed that each aspect of boundary work is highly interrelated with the others. For instance, people's sensory experiences, such as an aesthetic appreciation of a certain object's shape, luminosity, or smell, serve not only as a *sensory* boundary but also help to create and maintain *spatial* boundaries. This resonates with Salazar's claim that people define their space through the use of particular materials [92].

Remote workers manage their time and tasks based on which role is foregrounded between home and work; *role transitions* often serve to define and maintain *relational* and *temporal* boundaries. Redditors reported assigning blocks of time to accomplish domestic chores or child care activities during the day as a means for more explicitly mode-switching from "working" to "home." These time blocks segment not only time but also self-identity, in order to smoothly facilitate border crossings between home and work.

In the end, all boundaries either directly or indirectly influence the negotiation of *psychological* boundaries. This might be not a surprise since boundary work is itself a psycho-social activity. To make sense of ourselves and our environment, people draw "fine lines that keep different experiential realms separate from one another" [116, p. 84]. These mental lines manifest boundaries in how we construct our identities, attitudes, perceptions, and values when interacting with our

Segmentation (Rigid mindset)   Integration (Fuzzy mindset)

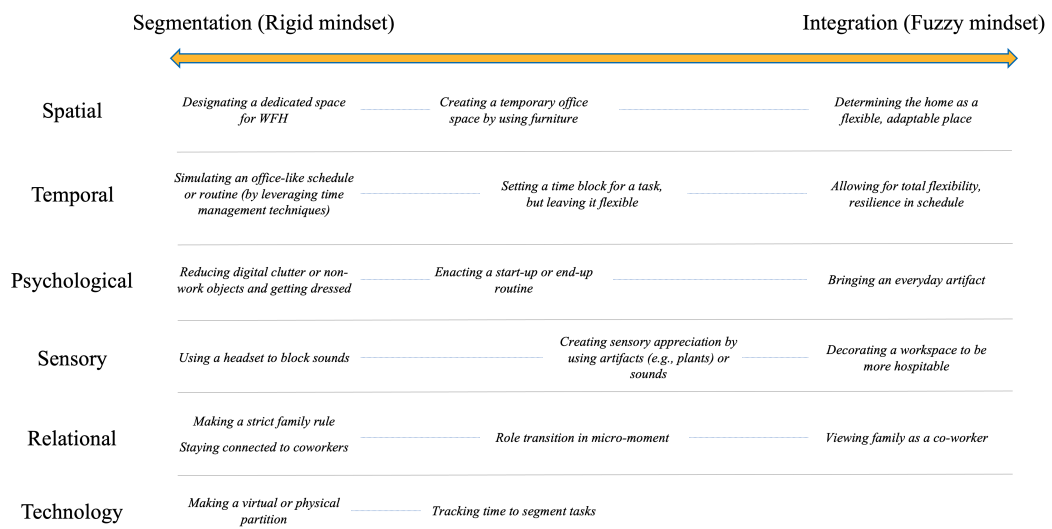|	Segmentation (Rigid mindset)		Integration (Fuzzy mindset)
Spatial	*Designating a dedicated space for WFH*	*Creating a temporary office space by using furniture*	*Determining the home as a flexible, adaptable place*
Temporal	*Simulating an office-like schedule or routine (by leveraging time management techniques)*	*Setting a time block for a task, but leaving it flexible*	*Allowing for total flexibility, resilience in schedule*
Psychological	*Reducing digital clutter or non-work objects and getting dressed*	*Enacting a start-up or end-up routine*	*Bringing an everyday artifact*
Sensory	*Using a headset to block sounds*	*Creating sensory appreciation by using artifacts (e.g., plants) or sounds*	*Decorating a workspace to be more hospitable*
Relational	*Making a strict family rule* *Staying connected to coworkers*	*Role transition in micro-moment*	*Viewing family as a co-worker*
Technology	*Making a virtual or physical partition*	*Tracking time to segment tasks*	

Fig. 1. The segmentation–integration continuum for boundary work.

(sometimes shared or overloaded) spaces. While boundaries are usually taken for granted [116], the sudden collapse of physical spaces due to the COVID-19 pandemic drew attention to how remote workers manage these normally invisible boundaries. Since the traditional office is physically separate from the home, enacting psychological boundaries is relatively less important when switching between home and work modes. In the WFH setting, two different mental places coexist in a single space; as a result, people leveraged different kinds of boundary work to construct these otherwise-invisible, mental lines (using Zerubavel's terms) through the home.

5.2 Theoretical Implications of Boundary Work: From Segmentation to Integration

Our data also highlight the differences in individual approaches to conducting boundary work, as redditors reorganized their lives to support WFH through the use of diverse placemaking practices. We saw particular distinctions along the segmentation–integration continuum that helps "conceptualizing and juxtaposing home and work" [81, p. 5]. The segmentation–integration continuum captures *how* people place, maintain, or redefine boundaries (Figure 1). The segmentation approach is based on a rigid mindset, in which delineated, detached entities are separated from one another. On the other hand, a fuzzy mindset leads to an integration approach by admitting vagueness and ambiguity in the boundary [116].

Our findings showed that among the redditors in our corpus, the segmentation approach to the conduct of boundary work has been more common than the integration approach in the negotiation of work–home boundaries during the COVID-19 pandemic. Redditors consider the failure of establishing and maintaining clear boundaries between work and home life to be a major challenge for WFH; thus, many asked questions or shared their own tips about how to separate work from life in the home.

The segmentation approach has also been the main focus in supporting work–life balance in the research literature [4, 39]. While a high degree of segmentation between home and work realms allows workers to adopt clearer roles when performing their tasks, it renders transitions more difficult due to the low level of permeability between delineated realms [6, 26]. The more people apply segmentation strategies, the harder it becomes for people to transition back and forth

between work and home spheres. Nevertheless, in the WFH situation, many redditors argued that segmentation strategies were essential for improving not only productivity but also quality of life.

Despite the rhetoric focused on keeping work and home separate, many of the boundary work strategies described on reddit focused on introducing the office's sense of place into the home workplace. Many redditors described leveraging time, artifacts, routines, sensory experiences, and social interaction in service of *simulating* the experience of working from or in the office. By doing this, they attempted to transcend the spatial limitations imposed by mandatory WFH. These types of boundary work aimed to integrate the office's sense of place into the home—neither a clear-cut example of a segmentation-focused strategy (although they often utilized a combination of what would be considered segmentation approaches on a case-by-case basis) nor an obvious instance of boundary integration. Nevertheless, we see how application of these techniques increased the permeability of boundaries, a finding antithetical to the hypotheses expressed by the research on WFH conducted prior to the COVID-19 pandemic [6, 26]. Perhaps because the work and home domains became more interrelated during the COVID-19 pandemic, the high level of permeability in boundary work may be associated with increased work–life balance, rather than work–life conflict.

Our findings also highlight the psychological role that routines and rituals play in helping redditors to navigate work–home boundaries. By enacting a series of regular activities, people psychologically attach or detach from work. In contrast to spatial or temporal boundary work, which require additional resources, routines or rituals are a relatively easy way for remote workers to immerse oneself in an office's sense of place by regularly repeating the acts that define that place. For example, rites of separation (e.g., start-up and shut-down routines) help people transfer from one mental sphere to another [6, 116], even if they are not physically transitioning from one space to another. By enacting everyday practices such as walking outside, drinking coffee, or wearing a particular type of clothing, they can also import an invisible and sensorial sense of office topophilia into the home. As a result, we argue that psychological boundary work—leveraging facets of the mundane as the core of a placemaking activity—can be a very effective and efficient way for constructing a new topophilia of the home by mixing in or borrowing from the office's sense of place.

While segmentation approaches are generally dominant among the WFH strategies shared by the redditors in our study, we also found that some individuals applied an integration approach. Although WFH forces people to negotiate two distinct domains in a single physical space, we saw some redditors construct new conceptualizations of what a workspace means based on the material, environment, and qualities of the home. Incorporating the home's sense of place into the office is not a new placemaking activity [114]; personalization of workplace offices is a commonplace practice. In this context, individuals use homemaking practices to shape their own insular place for work, a place where they feel comfortable and have a sense of belonging, distinct from other kinds of office space. These redditors who prefer integration of the subjective and embrace the emotional attachment they have to the home and home-like spaces might have a more *fuzzy* or *flexible* mindset [116] around boundaries and borders. For instance, one redditor gave advice that having a flexible mindset about home–work boundaries might be a more pragmatic or realistic way to deal with WFH challenges:

> 'The overlap between personal and professional time is inevitable, even for your most dedicated employees. So maybe a more lenient view on that kind of thing might be nice.' (r/workfromhome)

Our findings indicate that the work and home environments are not necessarily opposed, demonstrating that aspects of home topophilia that make people feel more comfortable can support remote

	A) A dedicated space for work	B) Office Topophilia into Home	C) Home Topophilia into workspace
Description	- A controllability in space, time and relation* - A spacious house for a dedicated workspace - A high border strength between a home office and a home - No flexibility and less permeability in the spatial boundary	- A lack of resources for space - Introduce office's sense of place into home to mentally separate work from home - A low border strength between a home office and a home - A high flexibility and permeability in the spatial boundary - Main boundary strategy: enacting routines or rituals	- Blend home's sense of place and attachment into a home office through artifacts, environments, and social relations - A higher flexibility and permeability in all boundary works (Resilience) - Main boundary strategy: capitalizing aesthetic appreciation and facilitating family communication within the home
Approaches to Boundary Work	Segmentation	Hybrid	Integration
Possible Technologies	- Existing, workplace-oriented technologies (e.g., time management or productivity tools used in office setting)	- Supporting not only routinized behaviors but also symbolic or cultural values (e.g., Highlight Matome [7]) - Celebrating a moment of ritual (e.g., Ritual Machine [54], Badges in activity trackers)	- Somaesthetic design [46,47] - Home communication technology (e.g., Home note [82])

* Note that not everyone has a controllability in both space, time and relation, but our data showed that people who have enough space to be able to design a dedicated space for work also have a controllability in time and relations with their households
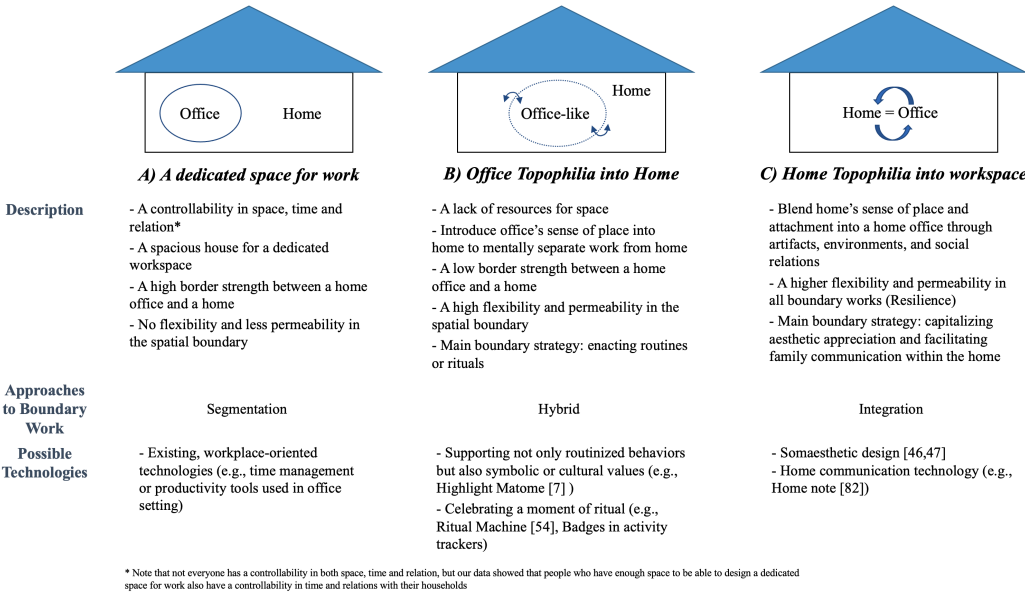
Fig. 2. Three distinct patterns in leveraging boundaries as a resource for making a home office. (The house visualizations are inspired by Zerubavel's "island of meaning" idea [116] and Nippert-Eng's drawing of the conceptual territory [81].)

workers' productivity and quality of life. Pratt [89] also found that remote workers wanted to integrate their work and personal lives for better work–life balance.

As organizations enact their return-to-office policies or permanently adopt hybrid models that allow employees to work in both the home and the office, workers' affinities with the various points along the segmentation–integration continuum that we identified in our data may shift or evolve. Given our findings and the characteristics of people found to prefer working from home (and not) from previous research [9, 89], two types of groups—those who have a fuzzy or flexible mindset around boundaries and who can successfully integrate office and home topophilia and those who have control over temporal, physical, and social aspects of the home environment such that effective segmentation is possible—may gravitate towards continuing to work from home, and do so effectively by internalizing new topophilia. On the other hand, individuals who prefer segmentation strategies but who have less control over their home environments may be the first to embrace returning to their offices, in addition to those who live alone and lack desired social interaction [89]. While we can neither assert what type of boundary work is transient nor predict a permanent pattern in boundary work, given insights from our findings and previous work, successfully constructing a new topophilia of home based on individuals' unique situations might be crucial for those continuing to WFH.

5.3 Design Implications: Toward an Alternative Topophilia for WFH

WFH experiences are varied depending on the industry, personal background or characteristics, social and cultural factors at home, and so on. Our findings also showed that some people are satisfied with WFH while others are not. This might make it harder to design technologies to support WFH using a one-size-fits-all approach, even with personalized features. From an organizational perspective, the deployment of groupware technologies that help individuals to overcome spatial,

temporal, or social constraints can benefit remote workers, addressing some of the specific challenges identified in our data (e.g., feeling more connected to the office, re-establishing some of the benefits of co-location). Mobile-to-virtual office technologies [77] or virtual reality platforms [101] offer some novel techniques for closing these gaps, although adoption of these technologies will, in turn, necessitate changes to the topophilia of the home to support their effective use. Despite the potential of ICTs and groupware technologies for supporting formal employee collaboration or informal bonding in the WFH setting, our findings suggest that it is not only the deployment of ICT and groupware technologies, but also support for remote workers' placemaking practices that will be needed if the aim is to increase these workers' overall productivity and well-being. So rather than address technological solutions from an organization's perspective, we discuss how technology can be made "at home with the rest of our world" [91, p. 549] by situating them within remote workers' placemaking practices.

While it is difficult to generalize redditors' boundary work into a few cases as a basis for a design space to support WFH, there do seem to be three distinct patterns in leveraging boundaries as a resource for placemaking that suggest opportunities for productive intervention (Figure 2). Redditors who have the agency to autonomously control their space and time are more likely to report enjoying their WFH experiences. For these individuals, additional effort can be invested in helping them to negotiate the boundaries between home and work, but doing so may not be necessary. Having enough flexible space in the home and the ability to control one's own time and manage family relationships relieves a good deal of the pressures of establishing a functional workspace within the home. In this case, there might be no need to respond specifically to the challenges of establishing WFH environments; instead, adapting existing workplace-oriented technologies that support time management, an individual sense of productivity, and workplace well-being to respond to the realities of a mixed work-and-home environment might be the most appropriate and useful design direction for supporting these individuals. For instance, self-tracking or self-monitoring tools help people gain a perceived sense of control by tracking how they spend their time and by deploying interventions to manage their time well [57, 60, 113]; these tools might be extended to represent both work and domestic activities or to encourage coordination of breaks with other co-present family members, but the central focus need not change in order to provide value in this case.

Another type of placemaking practice redditors often did is to integrate office topophilia into a home by enacting multiple boundary resources. These individuals have fewer resources and autonomy to take control of their space, their time, or their relations with family members (and sometimes none), and they encounter more challenges associated with re-setting their sense of place to craft a workspace in the home. To cope with these challenges, redditors relied on importing an office-like schedule, atmosphere, and sense of social presence into the home with a focus on a hybrid segmentation–integration approach. Routines play a particularly strong role for these workers as a psychological mechanism for bringing office topophilia into a home.

Routine and ritual are often considered to be interchangeable synonyms, but they are distinct from each other; while both routine and ritual are repeated actions, rituals are involved with symbolic or cultural information [10, 70]. While routines are more likely a goal-oriented action (i.e., "this is what needs to be done"), ritual is a meaning-making process that defines the self or one's social identity [37]. Providing support for routinized activities can facilitate remote workers' role and support transitions between home and work, but adding some symbolic or cultural value to routinized behaviors might be even more effective in creating a sense of place for the WFH office. This is because rituals affect not just people's behavior but also their perception. For instance, Kirk et al. [61] introduced *ritual machines* to explore the role of technologies in supporting domestic rituals by augmenting their mundane practices. They found that participants naturally reflect on

issues of work–life balance after celebrating rituals. Another technological example that celebrates our daily life is *Highlight Matome* by Avrahami et al. [7]. This prototype helps office workers develop a positive attitude about their progress by prompting them to record daily successes. In the WFH setting, technology can both support established routines (e.g., by providing scaffolding or reminders to carry out templated formal and informal office activities across individual and collaborative interfaces) and to create new kinds of celebrations around boundary work activities (e.g., creating and reinforcing rituals at the point where transitions between home and work occur, highlighting the experience of a practice important or unique to WFH such as making coffee, taking a walk outside, or having a small chat with family members). Devices like fitness trackers have successfully adopted celebrations of the ritual and routine with designs like Apple's activity achievement badges; what would it mean to track, reward, and celebrate WFH activities in the way we do workouts?

The last type of placemaking practice evidenced in our data is integrating home and work topophilia to create a new, home-oriented instantiation of the workplace. Given that placemaking practices are highly associated with aesthetic appreciation and social relations [24, 109], our findings suggest that a potential role of digital technology for these individuals is to foreground the sensory experiences of home and to facilitate family communication within the home. Somaesthetic design that focuses on making people more aware of their felt bodily experiences has a potential for extending home topophilia into the workspace [52]. One of the qualities of somaesthetic design is subtleness in stimulus design [53]. Redditors who employed placemaking practices of extending home topophilia into their WFH workspaces might be receptive to the use of colors, sounds, and ambient indicators that help to blend facets of their home and work environments in subtle but continuous ways, creating a sense of a bridged or shared environment through aesthetic, affective, and experiential interactions. Communication tools for household members can also support bringing home topophilia into the home office. As these individuals tend to consider their family members to be co-workers during working hours, digital technology can facilitate home communication to help them simultaneously and seamlessly manage both work and home affairs. For instance, Sellen et al. introduced the *HomeNote* prototype that allows household members to broadcast messages throughout the home [96]. By leveraging mundane aspects of a home, *HomeNote* augments existing communication practices in the home. We believe that these possible design spaces can also fulfill the missing perspective (i.e., "a material perspective of the home") in designing domestic technology [32].

5.4 A Need for Alternative Notions of Productivity and Work

Productivity, especially in the office or organizational setting, has been measured and investigated using standardized procedures that narrowly focus on efficiency and effectiveness. So, the output of work, such as the number of tasks completed or the quality of the result, is often considered as a barometer to evaluate productivity [85]. However, people make sense of the notion of productivity in different ways [59, 78]. The individual's idiosyncrasies in their home lead to even more diverse notions of productivity. Our findings also suggest the need to re-evaluate (or rethink) conceptualizations of productivity and its measurement in the design of technologies and policies for WFH.

Some redditors in our corpus shared stories about companies that supported their employees in setting up a work environment from home, with resources such as mental health services and flexible, paid time-off policies. Some less-supportive organizations mandated restrictive WFH policies and mandated use of technological tools to track employees' performance and work status (e.g., mandatory camera-on policy, tracking all application and internet use on work computers used

at home). A physical presence in the office provides light-weight social pressure as an account-ability mechanism for improving productivity; in contrast, redditors mentioned that WFH social accountability policies and surveillance technologies created stress, guilt, and anxiety, leading to more questionable productivity outcomes. These policies are based on the underlying assumption that all employees are expected to work in an office-like timeframe and environment, maintaining the same level of productivity at home as they would in the office. Many organizations would ask employees to return to an office post-pandemic, but many remote workers would prefer to stay remote or adopt a hybrid work schedule [13, 55, 94].

Our findings showed that WFH made some remote workers rearrange their temporal boundaries depending on their personal and family situations. For instance, some redditors had become more resilient in performing their work and more flexible in perceiving time depending on their mood, the state of their household, and the work deliverables ahead of them. These individuals applied a *flexible* and *fuzzy* mindset in managing temporal boundaries. They relished being given the freedom and flexibility to define their own timelines for work. They also put first priority on their mental wellbeing over task completion in order to have more sustainable work practices from home. As a result, a long-term discussion of the future of WFH needs to include not only a discussion of how the work is carried out, how boundaries are established and maintained, and how both of these facets of remote work can best be supported via technology, but it also needs to include significant engagement with how we define and assess productivity and work.

Leshed and Sengers critiqued current productivity tools that reinforce the notion that employees need to always be busy, and thus implant the cultural norm that being busy is an important part of productivity [69]. As we have seen from other recent papers [59, 78], the cultural norm of busyness is ingrained in how people evaluate their own performance. Rather than helping people to think more holistically about their work and life, productivity-focused technologies force them to be in a constant functional state. As a result, people often focus on losses of or lags in productivity, leading to stress and anxiety [45, 69].

Mazmanian et al. [75] found that the dominant time logic is not sufficient to encapsulate lived temporal experience. Pschetz [90] also urged that a pluralistic approach to temporality should be considered in designing technology to encompass more situated and nuanced temporalities. Many of our contemporary "productivity applications" appear to formalize our notions of time, work, and productivity using a single—but restricted—point of view. From this perspective, time should be measured in exact quantitative and objective ways (i.e., circumscribed time [75]), and therefore busyness plays an important role in how work is structured, accomplished, and evaluated.

We do not argue that performing tasks more effectively and efficiently is not important; instead, we argue that the challenges and strategies shared for establishing healthy and functional WFH environments foreground different ideas of productivity grounded in flexibility, holistic coordination of the work and non-work self, and evaluation of outcomes instead of effort (i.e., Time Well Spent [49]). We argue that technological tools (and associated company policies) should incorporate multiple modes of work not only to better support productivity and work–life balance in the WFH setting but to also optimize employees' performance from a managerial perspective. Well-designed tools need to incorporate an acknowledgement of the organization, affinities, and pressures from people's everyday lives that sit side-by-side with both the place and the activity of work, rather than to blindly apply the dominant notion of productivity that makes people speed up their lives to be more efficient and effective.

5.5 Limitations and Future Work

Our work is based on the qualitative analysis of Reddit data that captures recent WFH experiences in general. While our findings identified myriad and rich data about remote workers' benefits and

challenges in WFH, as well as their boundary work and placemaking practices, redditors from two subreddits represent only a portion of individuals who have been working from home during the COVID-19 pandemic. Moreover, while Reddit is used globally, it is a Western-centered community that English-speakers can access more easily. Given the qualitative nature of our data and the fact that each worker is situated in a distinct situation, making generalizable claims about our findings might be difficult, or even useless, in offering implications for WFH.

Furthermore, given the fact that Reddit is an anonymous online community, data from our corpus did not allow us to discriminate between types of work or job roles. So, it is not possible for us to report any specific characteristics of a certain group of remote workers. Although white-collar workers, such as information workers or professionals, have been considered the dominant groups utilizing remote work modalities, defining the population of remote workers still remains largely unanswered [8]. We do know that mandatory WFH during the pandemic has caused a more diverse group of people to work remotely, and we speculate that our corpus may well reflect a broader diversity of workers and work types than have been included in and represented by prior research; however, identifying specific patterns or associations between job type and WFH challenges or strategies is not possible from this study.

As more online jobs have become available after the onset of the pandemic, we found many posts about job seeking for online gig work such as data entry (although these job-seeking posts were excluded from our analysis based on sampling criteria). As a result, future research in this domain might need to narrow the scope of inquiry to a certain cultural context, socioeconomic background, or industry. For instance, recent work has investigated WFH experiences of people with disabilities [18, 31, 102] and online gig workers [110]. Focus groups, interviews, or workshops with a certain organization or group may yield additional insights into the challenges that specific kinds of workers face and how these specific groups of workers negotiate boundaries to reshape their sense of place in the home. We believe that our empirical findings and theoretical contributions can scaffold future research by providing a framework for examining more local issues within a particular population.

Furthermore, while our work identified various placemaking practices through boundary work, future projects could also be carried out in the style of action research to envision, discuss, and evaluate possible technological solutions with WFH populations. Beyond an individual remote worker's perspective and voice, future research might also include all household members as stakeholders to discuss work–life balance in WFH situations. Our findings emphasized the importance of relational factors in placemaking practices, but our corpus did not include other household members' perspectives.

Lastly, our data is representative of the specific time frame during which public health lockdowns and social distancing policies have been applied. While many companies have indicated willingness to allow employees to work from home permanently, they are also implementing alternative work modes (e.g., hybrid in-person/work-from-home modalities). Future research should investigate how post-pandemic life affects WFH practices.

6 CONCLUSION

With the advent of the COVID-19 pandemic, the work culture has been irreversibly impacted in a myriad of ways, especially for information workers. While having presented many challenges to the way we live and work, the work-from-home phenomena has also provided an opportunity to re-conceptualize our understanding of work–life balance, productivity, and the various challenges and needs of employees, including the role that technologies play in shaping environments and activities. By understanding WFH employees' experiences—including pros and cons in WFH and the strategies used to overcome WFH challenges—we are offered a new understanding of problems of mental

health, productivity, and socialization in the context of work. In this study, we aimed to understand how individuals perform boundary work to navigate the transitions between work and home roles, how people shape the topophilia of each of WFH environments, and how remote workers modify their lives based on WFH. By performing a qualitative analysis of Reddit conversations during the pandemic across multiple WFH-oriented online communities, we identified six types of boundary work that are enacted in order to reconstruct the sense of place and attachment for homes and spontaneously created home offices. In exploring topophilia, placemaking, and boundary work in the context of the COVID-19 WFH experience and its psycho-social impacts, we are given a new lens with which to explore the interplay between these two fundamental realms, and better tools to govern them.

ACKNOWLEDGMENTS

REFERENCES

[1] Balazs Aczel, Marton Kovacs, Tanja van der Lippe, and Barnabas Szaszi. 2021. Researchers working from home: Benefits and challenges. *PloS One* 16, 3 (2021), e0249127. https://doi.org/10.1371/journal.pone.0249127

[2] Yoana Ahmetoglu, Duncan P. Brumby, and Anna L. Cox. 2020. A longitudinal interview study on work planning during COVID-19 lockdown. Position paper for the Microsoft Research New Future of Work Workshop, August 3–5. https://www.microsoft.com/en-us/research/publication/a-longitudinal-interview-study-on-work-planning-during-covid-19-lockdown/

[3] Tammy D. Allen, Eunae Cho, and Laurenz L. Meier. 2014. Work–family boundary dynamics. *Annual Review of Organizational Psychology and Organizational Behavior* 1, 1 (2014), 99–121. https://doi.org/10.1146/annurev-orgpsych-031413-091330

[4] Tammy D. Allen, Kelsey Merlo, Roxanne C. Lawrence, Jeremiah Slutsky, and Cheryl E. Gray. 2021. Boundary management and work-nonwork balance while working from home. *Applied Psychology* 70, 1 (2021), 60–84. https://doi.org/10.1111/apps.12300

[5] Iris Aravot. 2002. Back to phenomenological placemaking. *Journal of Urban Design* 7, 2 (2002), 201–212. https://doi.org/10.1080/1357480022000012230

[6] 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 (July 2000), 472–491. https://doi.org/10.2307/259305

[7] Daniel Avrahami, Kristin Williams, Matthew L. Lee, Nami Tokunaga, Yulius Tjahjadi, and Jennifer Marlow. 2020. Celebrating everyday success: Improving engagement and motivation using a system for recording daily highlights. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20)*. ACM Press, New York, NY, 1–13. https://doi.org/10.1145/3313831.3376369

[8] Diane E. Bailey and Nancy B. Kurland. 2002. A review of telework research: Findings, new directions, and lessons for the study of modern work. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior* 23, 4 (2002), 383–400. https://doi.org/10.1002/job.144

[9] Yehuda Baruch. 2000. Teleworking: benefits and pitfalls as perceived by professionals and managers. *New technology, work and employment* 15, 1 (2000), 34–49.

[10] Catherine M. Bell. 1997. *Ritual: Perspectives and dimensions.* Oxford University Press, Oxford, UK.

[11] Genevieve Bell, Mark Blythe, Bill Gaver, Phoebe Sengers, and Peter Wright. 2003. Designing culturally situated technologies for the home. In *CHI '03 Extended Abstracts on Human Factors in Computing Systems (CHI EA '03)*. ACM Press, New York, NY, 1062–1063. https://doi.org/10.1145/765891.766149

[12] John W. Berry. 1999. Emics and etics: A symbiotic conception. *Culture & Psychology* 5, 2 (1999), 165–171. https://doi.org/10.1177/1354067X9952004

[13] Sue Bingham. 2021. *To Make Hybrid Work, Solicit Employees' Input.* Harvard Business Review. https://hbr.org/2021/07/to-make-hybrid-work-solicit-employees-input

[14] Jeanette Blomberg and Helena Karasti. 2013. Reflections on 25 years of ethnography in CSCW. *Computer Supported Cooperative Work (CSCW)* 22, 4–6 (2013), 373–423. https://doi.org/10.1007/s10606-012-9183-1

[15] Alison Blunt. 2005. Cultural geography: Cultural geographies of home. *Progress in Human Geography* 29, 4 (2005), 505–515. https://doi.org/10.1191/0309132505ph564pr

[16] Geoffrey C. Bowker and Susan Leigh Star. 1999. *Sorting things out: Classification and its consequences.* MIT Press, Cambridge, MA.

[17] Carrie J. Cai, Michelle Carney, Nida Zada, and Michael Terry. 2021. Breakdowns and breakthroughs: Observing musicians' responses to the COVID-19 pandemic. In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (CHI '21).* ACM Press, New York, NY, Article 571, 13 pages. https://doi.org/10.1145/3411764.3445192

[18] Natalie Canning and Beryl Robinson. 2021. Blurring boundaries: The invasion of home as a safe space for families and children with SEND during COVID-19 lockdown in England. *European Journal of Special Needs Education* 36, 1 (2021), 65–79. https://doi.org/10.1080/08856257.2021.1872846

[19] Juan Carlos Alvarez de la Vega, Marta E. Cecchinato, and John Rooksby. 2021. "Why Lose Control?": A Study of Freelancers' Experiences with Gig Economy Platforms. In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (CHI '21).* ACM Press, New York, NY, Article 455, 14 pages. https://doi.org/10.1145/3411764.3445305

[20] 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 (CHI '15).* ACM Press, New York, NY, 3989–3998. https://doi.org/10.1145/2702123.2702537

[21] Maria Charalampous, Christine A Grant, Carlo Tramontano, and Evie Michailidis. 2019. Systematically reviewing remote e-workers' well-being at work: A multidimensional approach. *European Journal of Work and Organizational Psychology* 28, 1 (2019), 51–73.

[22] Kathy Charmaz. 2006. *Constructing grounded theory: A practical guide through qualitative analysis.* SAGE Publications, London, UK.

[23] Janghee Cho and Stephen Voida. 2020. Envisioning New Productivity Tools for Domestic Information Work Environments. (August 2020). https://www.microsoft.com/en-us/research/publication/envisioning-new-productivity-tools-for-domestic-information-work-environments/

[24] Luigina Ciolfi, Breda Gray, and Aparecido Fabiano Pinatti de Carvalho. 2020. Making home work places. In *Proceedings of the 18th European Conference on Computer-Supported Cooperative Work (ECSCW).* European Society for Socially Embedded Technologies (EUSSET), Siegen, Germany, Exploratory Paper 10. https://dl.eusset.eu/handle/20.500.12015/3403

[25] Francesco Cirillo. 2018. *The Pomodoro technique: The life-changing time-management system.* CURRENCY, New York, NY.

[26] Sue Campbell Clark. 2000. Work/family border theory: A new theory of work/family balance. *Human Relations* 53, 6 (2000), 747–770. https://doi.org/10.1177/0018726700536001

[27] Jen Colletta. 2021. *Are you hiring a director of remote work? Here's why Facebook did.* Human Resource Executive. https://hrexecutive.com/are-you-hiring-a-director-of-remote-work-heres-why-facebook-did/

[28] Anna L. Cox, Jon Bird, Natasha Mauthner, Susan Dray, Anicia Peters, and Emily Collins. 2014. Socio-technical practices and work-home boundaries. In *Proceedings of the 16th International Conference on Human-Computer Interaction with Mobile Devices & Services (MobileHCI '14).* ACM Press, New York, NY, 581–584. https://doi.org/10.1145/2628363.2634259

[29] Tim Cresswell. 2014. *Place: An introduction.* John Wiley & Sons, Chichester, UK.

[30] Mihaly Csikszentmihalyi and Eugene Rochberg-Halton. 1981. *The meaning of things: Domestic symbols and the self.* Cambridge University Press, Cambridge, UK.

[31] Maitraye Das, John Tang, Kathryn E. Ringland, and Anne Marie Piper. 2021. Towards accessible remote work: Understanding work-from-home practices of neurodivergent professionals. *Proceedings of the ACM on Human-Computer Interaction (PACM-HCI)* 5, CSCW1, Article 183 (April 2021), 30 pages. https://doi.org/10.1145/3449282

[32] Audrey Desjardins, Ron Wakkary, and William Odom. 2015. Investigating genres and perspectives in HCI research on the home. In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems (CHI '15).* ACM Press, New York, NY, 3073–3082. https://doi.org/10.1145/2702123.2702540

[33] Hazel Easthope. 2004. A place called home. *Housing, Theory and Society* 21, 3 (2004), 128–138. https://doi.org/10.1080/14036090410021360

[34] Nicole B. Ellison. 1999. Social impacts: New perspectives on telework. *Social Science Computer Review* 17, 3 (1999), 338–356. https://doi.org/10.1177/089443939901700308

[35] Nicole B. Ellison. 2004. *Telework and social change: How technology is reshaping the boundaries between home and work.* Praeger Publishers, Westport, CT.

[36] Alan Felstead and Golo Henseke. 2017. Assessing the growth of remote working and its consequences for effort, well-being and work-life balance. *New Technology, Work and Employment* 32, 3 (2017), 195–212. https://doi.org/10.1111/ntwe.12097

[37] Barbara H. Fiese, Thomas J. Tomcho, Michael Douglas, Kimberly Josephs, Scott Poltrock, and Tim Baker. 2002. A review of 50 years of research on naturally occurring family routines and rituals: Cause for celebration? *Journal of Family Psychology* 16, 4 (2002), 381–390. https://doi.org/10.1037/0893-3200.16.4.381

[38] Rowanne Fleck, Anna L. Cox, and Rosalyn A.V. Robison. 2015. Balancing boundaries: Using multiple devices to manage work-life balance. In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems (CHI '15)*. ACM Press, New York, NY, 3985–3988. https://doi.org/10.1145/2702123.2702386

[39] Kathryn L. Fonner and Lara C. Stache. 2012. All in a day's work, at home: Teleworkers' management of micro role transitions and the work–home boundary. *New Technology, Work and Employment* 27, 3 (2012), 242–257. https://doi.org/10.1111/j.1468-005X.2012.00290.x

[40] Radhika Garg, Yash Kapadia, and Subhasree Sengupta. 2021. Using the lenses of emotion and support to understand unemployment discourse on Reddit. *Proceedings of the ACM on Human-Computer Interaction (PACM-HCI)* 5, CSCW1, Article 14 (April 2021), 24 pages. https://doi.org/10.1145/3449088

[41] Maria Glenski, Emily Saldanha, and Svitlana Volkova. 2019. Characterizing Speed and Scale of Cryptocurrency Discussion Spread on Reddit. In *Proceedings of the World Wide Web Conference (WWW '19)*. ACM Press, New York, NY, 560–570. https://doi.org/10.1145/3308558.3313702

[42] Victor M González and Gloria Mark. 2004. "Constant, constant, multi-tasking craziness": Managing multiple working spheres. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '04)*. ACM Press, New York, NY, 113–120. https://doi.org/10.1145/985692.985707

[43] Colin M. Gray, Shruthi Sai Chivukula, and Ahreum Lee. 2020. What kind of work do "asshole designers" create?: Describing properties of ethical concern on Reddit. In *Proceedings of the 2020 ACM Designing Interactive Systems Conference (DIS '20)*. ACM Press, New York, NY, 61–73. https://doi.org/10.1145/3357236.3395486

[44] Erik Grönvall, Luigina Ciolfi, Gabriela Avram, Chiara Rossitto, and Louise Barkhuus. 2016. HCI at the boundary of work and life. *Personal and Ubiquitous Computing* 20 (Aug. 2016), 481–485. https://doi.org/10.1007/s00779-016-0937-5

[45] Hayley Guillou, Kevin Chow, Thomas Fritz, and Joanna McGrenere. 2020. Is your time well spent?: Reflecting on knowledge work more holistically. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20)*. ACM Press, New York, NY, 1–9. https://doi.org/10.1145/3313831.3376586

[46] Leslie Haddon and Alan Lewis. 1994. The experience of teleworking: an annotated review. *International Journal of Human Resource Management* 5, 1 (1994), 193–223.

[47] Susan Halford. 2005. Hybrid workspace: Re-spatialisations of work, organisation and management. *New Technology, Work and Employment* 20, 1 (2005), 19–33. https://doi.org/10.1111/j.1468-005X.2005.00141.x

[48] Susan Hanson and Geraldine Pratt. 1988. Reconceptualizing the links between home and work in urban geography. *Economic geography* 64, 4 (Oct. 1988), 299–321. https://doi.org/10.2307/144230

[49] Tristan Harris. 2017. Time well spent. Presentation at the New York State Association of Independent Schools Education and Information Technology Conference, New Paltz, NY, January 27. https://youtu.be/ES6bJgUETT8

[50] Steve Harrison and Paul Dourish. 1996. Re-place-ing space: The roles of place and space in collaborative systems. In *Proceedings of the 1996 ACM Conference on Computer Supported Cooperative Work (CSCW '96)*. ACM Press, New York, NY, 67–76. https://doi.org/10.1145/240080.240193

[51] E. Jeffrey Hill, Alan J. Hawkins, and Brent C. Miller. 1996. Work and family in the virtual office: Perceived influences of mobile telework. *Family Relations* 49, 3 (July 1996), 293–301. https://doi.org/10.2307/585501

[52] Kristina Höök. 2018. *Designing with the body: Somaesthetic interaction design.* MIT Press, Cambridge, MA.

[53] Kristina Höök, Martin P. Jonsson, Anna Ståhl, and Johanna Mercurio. 2016. Somaesthetic appreciation design. In *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems (CHI '16)*. ACM Press, New York, NY, 3131–3142. https://doi.org/10.1145/2858036.2858583

[54] Fran Irwin. 2004. Gaining the air quality and climate benefit for telework. World Resources Institute, Washington, DC. http://goo.gl/IvdkU

[55] Stacy-Marie Ishmael. 2021. *Why the best work from home policy is rooted in inclusion.* Fortune. https://fortune.com/2021/07/27/best-work-from-home-policy-inclusion/

[56] Ruogu Kang, Stephanie Brown, and Sara Kiesler. 2013. Why do people seek anonymity on the internet?: Informing policy and design. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '13)*. ACM Press, New York, NY, 2657–2666. https://doi.org/10.1145/2470654.2481368

[57] Harmanpreet Kaur, Alex C. Williams, Daniel McDuff, Mary Czerwinski, Jaime Teevan, and Shamsi T. Iqbal. 2020. Optimizing for happiness and productivity: Modeling opportune moments for transitions and breaks at work. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20)*. ACM Press, New York, NY, 1–15. https://doi.org/10.1145/3313831.3376817

[58] Alison Kidd. 1994. The marks are on the knowledge worker. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '94)*. ACM Press, New York, NY, 186–191. https://doi.org/10.1145/191666.191740

[59] Young-Ho Kim, Eun Kyoung Choe, Bongshin Lee, and Jinwook Seo. 2019. Understanding personal productivity: How knowledge workers define, evaluate, and reflect on their productivity. In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems (CHI '19)*. ACM Press, New York, NY, Article 615. https://doi.org/10.1145/3290605.3300845

[60] Young-Ho Kim, Jae Ho Jeon, Eun Kyoung Choe, Bongshin Lee, KwonHyun Kim, and Jinwook Seo. 2016. TimeAware: Leveraging framing effects to enhance personal productivity. In *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems (CHI '16)*. ACM Press, New York, NY, 272–283. https://doi.org/10.1145/2858036.2858428

[61] David S. Kirk, David Chatting, Paulina Yurman, and Jo-Anne Bichard. 2016. Ritual Machines I & II: Making technology at home. In *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems (CHI '16)*. ACM Press, New York, NY, 2474–2486. https://doi.org/10.1145/2858036.2858424

[62] Megan Knittel, Faye Kollig, Abrielle Mason, and Rick Wash. 2021. Anyone else have this experience: Sharing the emotional labor of tracking data about me. *Proceedings of the ACM on Human-Computer Interaction (PACM-HCI)* 5, CSCW1, Article 79 (April 2021), 30 pages. https://doi.org/10.1145/3449153

[63] Ellen Ernst Kossek. 2016. Managing work–life boundaries in the digital age. *Organizational Dynamics* 45, 3 (July–Sept. 2016), 258–270. https://doi.org/10.1016/j.orgdyn.2016.07.010

[64] Ellen Ernst Kossek, Brenda A. Lautsch, and Susan C. Eaton. 2006. Telecommuting, control, and boundary management: Correlates of policy use and practice, job control, and work–family effectiveness. *Journal of Vocational Behavior* 68, 2 (April 2006), 347–367. https://doi.org/10.1016/j.jvb.2005.07.002

[65] Myungjung Kwon and So Hee Jeon. 2017. Why permit telework? Exploring the determinants of California city governments' decisions to permit telework. *Public Personnel Management* 46, 3 (2017), 239–262. https://doi.org/10.1177/0091026017717240

[66] Jean Lave and Etienne Wenger. 1991. *Situated learning: Legitimate peripheral participation.* Cambridge University Press, Cambridge, UK.

[67] Ahreum Lee, Austin L. Toombs, Ingrid Erickson, David Nemer, Yu-shen Ho, Eunkyung Jo, and Zhuang Guo. 2019. The social infrastructure of co-spaces: Home, work, and sociable places for digital nomads. *Proceedings of the ACM on Human-Computer Interaction (PACM-HCI)* 3, CSCW, Article 142 (Nov. 2019), 23 pages. https://doi.org/10.1145/3359244

[68] Paul M. Leonardi. 2012. Materiality, sociomateriality, and socio-technical systems: What do these terms mean? How are they different? Do we need them. In *Materiality and Organizing: Social Interaction in a Technological World*, Bonnie A. Nardi and Jannis Kallinikos (Eds.). Oxford University Press, Oxford, UK, 25–48. https://doi.org/10.2139/ssrn.2129878

[69] Gilly Leshed and Phoebe Sengers. 2011. "I lie to myself that i have freedom in my own schedule": Productivity tools and experiences of busyness. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '11)*. ACM Press, New York, NY, 905–914. https://doi.org/10.1145/1978942.1979077

[70] Pierre Lévy. 2015. Exploring the challenge of designing rituals. In *Proceedings of the 6th International Congress of International Association of Societies of Design Research (IASDR 2015)*. Queensland University of Technology, Brisbane, Australia, 2–5. https://research.tue.nl/en/publications/exploring-the-challenge-of-designing-rituals

[71] Hajin Lim, Ian Arawjo, Yaxian Xie, Negar Khojasteh, and Susan R. Fussell. 2017. Distraction or life saver? The role of technology in undergraduate students' boundary management strategies. *Proceedings of the ACM on Human-Computer Interaction (PACM-HCI)* 1, CSCW, Article 68 (Dec. 2017), 18 pages. https://doi.org/10.1145/3134703

[72] Jennifer Liu. 2020. *Virtual happy hours, team yoga sessions: How coworkers are staying connected while they work from home.* CNBC. https://www.cnbc.com/2020/03/25/how-coworkers-are-staying-connected-while-they-work-from-home.html

[73] Gloria Mark, Shamsi T. Iqbal, Mary Czerwinski, Paul Johns, and Akane Sano. 2016. Neurotics can't focus: An in situ study of online multitasking in the workplace. In *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems (CHI '16)*. ACM Press, New York, NY, 1739–1744. https://doi.org/10.1145/2858036.2858202

[74] Gloria Mark, Stephen Voida, and Armand Cardello. 2012. "A pace not dictated by electrons": An empirical study of work without email. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '12)*. ACM Press, New York, NY, 555–564. https://doi.org/10.1145/2207676.2207754

[75] Melissa Mazmanian, Ingrid Erickson, and Ellie Harmon. 2015. Circumscribed time and porous time: Logics as a way of studying temporality. In *Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing (CSCW '15)*. ACM Press, New York, NY, 1453–1464. https://doi.org/10.1145/2675133.2675231

[76] Melissa A. Mazmanian, Wanda J. Orlikowski, and JoAnne Yates. 2005. Crackberries: The social implications of ubiquitous wireless e-mail devices. In *Designing Ubiquitous Information Environments: Social-Technical Issues and Challenges (Proceedings of the IFIP TC8 WG 8.2 International Working Conference)*. Springer, Boston, MA, 337–343. https://doi.org/10.1007/0-387-28918-6_25

[77] Jon C Messenger and Lutz Gschwind. 2016. Three generations of Telework: New ICT s and the (R) evolution from Home Office to Virtual Office. *New Technology, Work and Employment* 31, 3 (2016), 195–208.

[78] 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 (FSE '14)*. ACM Press, New York, NY, 19–29. https://doi.org/10.1145/2635868.2635892

[79] Andre N. Meyer, Gail C. Murphy, Thomas Zimmermann, and Thomas Fritz. 2017. Design recommendations for self-monitoring in the workplace: Studies in software development. *Proceedings of the ACM on Human-Computer Interaction (PACM-HCI)* 1, CSCW, Article 79 (Dec. 2017), 24 pages. https://doi.org/10.1145/3134714

[80] 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* 47, 9 (Sept. 2019), 15 pages. https://doi.org/10.1109/TSE.2019.2938525

[81] Christena E. Nippert-Eng. 2008. *Home and work: Negotiating boundaries through everyday life.* University of Chicago Press, Chicago, IL.

[82] Donald A Norman and Stephen W Draper. 1986. *User centered system design: New perspectives on human-computer interaction.* Lawrence Erlbaum Associates, Hillsdale, NJ.

[83] Oladele A. Ogunseitan. 2005. Topophilia and the quality of life. *Environmental Health Perspectives* 113, 2 (2005), 143–148. https://doi.org/10.1289/ehp.7467

[84] Margrethe H. Olson. 1983. Remote office work: Changing work patterns in space and time. *Commun. ACM* 26, 3 (1983), 182–187. https://doi.org/10.1145/358061.358068

[85] Organisation for Economic Co-operation and Development. 2001. *Measuring productivity: OECD Manual: Measurement of aggregate and industry-level productivity growth.* OECD Publications, Paris, France. http://www.oecd.org/sdd/productivity-stats/2352458.pdf

[86] YoungAh Park, Charlotte Fritz, and Steve M Jex. 2011. Relationships between work-home segmentation and psychological detachment from work: The role of communication technology use at home. *Journal of Occupational Health Psychology* 16, 4 (2011), 457. https://doi.org/10.1037/a0023594

[87] Sarah Pink, Heather Horst, John Postill, Larissa Hjorth, Tania Lewis, and Jo Tacchi. 2015. *Digital ethnography: Principles and practice.* SAGE Publications, Los Angeles, CA.

[88] Sarah Pink, Kerstin Leder Mackley, Roxana Morosanu, Val Mitchell, and Tracy Bhamra. 2017. *Making homes: Ethnography and design.* Routledge, London, UK.

[89] Joanne H Pratt. 1984. Home teleworking: A study of its pioneers. *Technological forecasting and social change* 25, 1 (1984), 1–14.

[90] Larissa Pschetz. 2015. Isn't it time to change the way we think about time? *interactions* 22, 5 (2015), 58–61. https://doi.org/10.1145/2809502

[91] Harvey Sacks. 1992. A single instance of a phone-call opening. *Lectures on conversation* 2 (1992), 542–553.

[92] Christine Salazar. 2001. Building boundaries and negotiating work at home. In *Proceedings of the 2001 International ACM SIGGROUP Conference on Supporting Group Work* (Boulder, Colorado) *(GROUP '01)*. ACM Press, New York, NY, 162–170. https://doi.org/10.1145/500286.500311

[93] Johnny Saldaña. 2015. *The coding manual for qualitative researchers* (3rd ed.). SAGE Publications, Los Angeles, CA.

[94] Alexandra Samuel. 2021. *What to Do When Everybody Returns to the Office—but You Remain Remote.* The Wall Street Journal. https://www.wsj.com/articles/return-to-office-what-to-do-while-staying-remote-11627396958

[95] Scott Schieman, Philip J. Badawy, Melissa A. Milkie, and Alex Bierman. 2021. Work-life conflict during the COVID-19 pandemic. *Socius: Sociological Research for a Dynamic World* 7 (2021), 1–19. https://doi.org/10.1177/2378023120982856

[96] Abigail Sellen, Richard Harper, Rachel Eardley, Shahram Izadi, Tim Regan, Alex S. Taylor, and Ken R. Wood. 2006. HomeNote: Supporting Situated Messaging in the Home. In *Proceedings of the 20th Anniversary Conference on Computer Supported Cooperative Work (CSCW '06)*. ACM Press, New York, NY, 383—-392. https://doi.org/10.1145/1180875.1180933

[97] Graham Sewell and Laurent Taskin. 2015. Out of sight, out of mind in a new world of work? Autonomy, control, and spatiotemporal scaling in telework. *Organization Studies* 36, 11 (2015), 1507–1529.

[98] Martin Shelton, Katherine Lo, and Bonnie Nardi. 2015. Online media forums as separate social lives: A qualitative study of disclosure within and beyond Reddit. In *iConference 2015 Proceedings*. iSchools, Grandville, MI, 12 pages. http://hdl.handle.net/2142/73676

[99] Michelle Shumate and Janet Fulk. 2004. Boundaries and role conflict when work and family are colocated: A communication network and symbolic interaction approach. *Human Relations* 57, 1 (2004), 55–74. https://doi.org/10.1177/0018726704042714

[100] Graham L Staines. 1980. Spillover versus compensation: A review of the literature on the relationship between work and nonwork. *Human relations* 33, 2 (1980), 111–129. https://doi.org/10.1177/001872678003300203

[101] Scott Stein. 2020. *Zoom, but in VR: Why Spatial's free meeting app feels like a leap forward.* Cnet. https://www.cnet.com/tech/services-and-software/zoom-but-in-vr-why-spatials-free-meeting-app-feels-like-a-leap-forward/

[102] John Tang. 2021. Understanding the telework experience of people with disabilities. *Proceedings of the ACM on Human-Computer Interaction (PACM-HCI)* 5, CSCW1, Article 30 (April 2021), 27 pages. https://doi.org/10.1145/3449104

[103] Aida Isabel Tavares. 2015. Telework and health effects review, and a research framework proposal. *Munich Personal RePEc Archive* (2015), 28 pages.

[104] Leslie Thomson. 2013. "When i've packed it in and they send me something…": Information boundaries in professional home offices. *Proceedings of the American Society for Information Science and Technology* 50, 1 (2013), 1–5. https://doi.org/10.1002/meet.14505001158

[105] Peter Tolmie, James Pycock, Tim Diggins, Allan MacLean, and Alain Karsenty. 2002. Unremarkable computing. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '02)*. ACM Press, New York, NY, 399–406. https://doi.org/10.1145/503376.503448

[106] John P. Trougakos, Nitya Chawla, and Julie M. McCarthy. 2020. Working in a pandemic: Exploring the impact of COVID-19 health anxiety on work, family, and health outcomes. *Journal of Applied Psychology* 105, 11 (2020), 1234. https://doi.org/10.1037/apl0000739

[107] Yi-Fu Tuan. 1976. Humanistic geography. *Annals of the Association of American Geographers* 66, 2 (1976), 266–276. https://doi.org/10.1111/j.1467-8306.1976.tb01089.x

[108] Yi-Fu Tuan. 1977. *Space and place: The perspective of experience.* University of Minnesota Press, Minneapolis, MN.

[109] Yi-Fu Tuan. 1990. *Topophilia: A study of environmental perceptions, attitudes, and values.* Columbia University Press, New York, NY.

[110] Stephen Uzor, Jason T. Jacques, John J Dudley, and Per Ola Kristensson. 2021. Investigating the Accessibility of Crowdwork Tasks on Mechanical Turk. In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*. Association for Computing Machinery, New York, NY, USA. https://doi.org/10.1145/3411764.3445291

[111] Vassileios Vescoukis, Anastasia Stratigea, Maria Giaoutzi, et al. 2012. Teleworking: From a technology potential to a social evolution. *Regional Science Inquiry* 4, 3 (2012), 37–50.

[112] Yun Wang, Ying Liu, Weiwei Cui, John Tang, Haidong Zhang, Doug Walston, and Dongmei Zhang. 2021. Returning to the Office During the COVID-19 Pandemic Recovery: Early Indicators from China. In *Extended Abstracts of the 2021 CHI Conference on Human Factors in Computing Systems (CHI EA '21)*. ACM Press, New York, NY, Article 417, 6 pages. https://doi.org/10.1145/3411763.3451685

[113] Steve Whittaker, Vaiva Kalnikaite, Victoria Hollis, and Andrew Guydish. 2016. "Don't waste my time": Use of time information improves focus. In *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems (CHI '16)*. ACM Press, New York, NY, 1729–1738. https://doi.org/10.1145/2858036.2858193

[114] Elizabeth Wilhoit Larson. 2020. Creating home at work: Humanistic geography and placemaking in organizations. *Culture and Organization* 27, 6 (2020), 437–455. https://doi.org/10.1080/14759551.2020.1861453

[115] Alex C. Williams, Harmanpreet Kaur, Gloria Mark, Anne Loomis Thompson, Shamsi T. Iqbal, and Jaime Teevan. 2018. Supporting Workplace Detachment and Reattachment with Conversational Intelligence. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (CHI '18)*. ACM Press, New York, NY, 1–13. https://doi.org/10.1145/3173574.3173662

[116] Eviatar Zerubavel. 1993. *The fine line.* University of Chicago Press, Chicago, IL.