International Communication Association

OXFORD

Managing collapsed boundaries in global work

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Abstract

Global workers have long contended with the challenges of working across geographical, temporal, and cultural boundaries enabled by communication technologies. However, the global work research has rarely intersected with the literature on work–home boundary management—which has been brought to the forefront due to the forced move to remote work during the Covid-19 pandemic. Drawing on a qualitative field study of 55 in-depth interviews with global workers from a large organization headquartered in the Nordics, we found that global workers drew on sociomaterial affordances to manage both global work and work–home boundaries through strategies of boundary support and boundary collapse. Although the shift to remote work created challenges due to boundary collapse, it presented new spatiotemporal affordances that led to unexpected benefits for both global work and work–life boundary management. The findings have implications for global work, remote work, and the future of work more broadly.

Lay Summary

In global organizations, workers face challenges related to boundary management as they are working across geographical, temporal, and cultural boundaries enabled by communication technologies. At the same time, workers need to manage boundaries between their work and home life to maintain work–life balance. However, the global work research has rarely intersected with the literature on work–home boundary management—which has been brought to the forefront due to the forced move to remote work during the Covid-19 pandemic. We collected qualitative data in a field study through in-depth interviews with 55 global workers from Europe, the United States, and Asia-Pacific, all of whom worked for a large organization headquartered in the Nordics. We found that sociomaterial affordances related to the possibilities provided by different workspaces and technologies enabled workers to manage both global work and work–home boundaries through strategies of boundary support and boundary collapse. Although the shift to remote work created challenges for global workers, it also presented new affordances that led to unexpected benefits for both global work and work–life boundary management. The findings have implications for global work, remote work, and the future of work more broadly.

Keywords: affordances, boundary management, communication technology, global work, remote work, office space

Working in today's global environment is increasingly characterized by the need for connectivity both within and beyond the normal workday (Lirio, 2017; Nurmi & Hinds, 2020). Global work—work accomplished across countries through global teams, outsourcing, or other distributed work arrangements—aims to improve organizational innovation and collaboration through integrating diverse knowledge and expertise from disparate parts of the organization (Stahl et al., 2010). Working across geographical, temporal, and cultural boundaries has been found to create tensions for workers (Gibbs, 2009), who are more likely to face pressures to communicate with colleagues after hours to accommodate time zone differences (Nurmi & Hinds, 2020; Van Zoonen et al., 2021). Managing boundaries is important for conducting global work and has implications for work–life balance (Maruyama et al., 2009), as even minimal time differences can create temporal constraints (Sivunen et al., 2016).

Management of global work boundaries is enabled by communication technologies such as social media and mobile devices, which afford new interactivity and connectivity among geographically dispersed workers (Ellison et al., 2015). In this study, we focus on workplace communication technologies such as email, intranets, online conferencing and instant messaging systems, mobile phones, and enterprise social media (Rice et al., 2017). Especially in global organizations, communication technologies often create new expectations for constant connectivity (Nurmi & Hinds, 2020) that place additional demands on one's time and attention and can be detrimental to workers' well-being.

The forced move to remote work for many workers due to the Covid-19 pandemic has brought issues of work–life conflict, boundary management, and worker well-being to the forefront and made them even more pressing. However, the global work research has remained largely separate from the work on boundary management and well-being. As a result, research has yet to consider how the connectivity and boundary management behaviors of global workers are influenced by the new boundary challenges imposed by work-from-home (WFH) arrangements and how different types of boundaries intersect. We draw upon a theoretical framework of *boundary affordances*, integrating boundary theory (Ashforth et al., 2000; Clark, 2000) with the affordances perspective (Evans et al., 2017; Treem & Leonardi, 2013) to investigate the sociomaterial affordances that global workers draw on in their global work and work–home boundary management strategies during the Covid-19 pandemic. By integrating these diverse literatures, we use boundary affordances as a sensitizing lens to investigate the ways in which both technological and spatiotemporal affordances shape global

workers' communication strategies for managing both global work and work–home boundaries.

We draw on a field study of a large global organization with headquarters (HQ) in the Nordics, consisting of 55 in-depth interviews with members of nine different global teams located across Europe, the United States, and Asia-Pacific. Our findings suggest that while the organizational culture worked in tandem with technological and spatiotemporal affordances to erect strict boundaries between work and personal domains through specific boundary support strategies, the shift to WFH arrangements created changes in the spatio-temporal affordances that presented challenges as well as unexpected benefits for managing both global work and work–home boundaries through enabling several boundary collapse strategies. This study helps extend theory on both boundary management and affordances and has implications for global work and the future of work more broadly.

Literature review
Boundary management in global work
Global work is typically regarded as work conducted in various offices and worksites across the globe (Gibbs et al., 2021b; Hinds et al., 2011; Nurmi & Hinds, 2020). Global work shares similar characteristics with other "new types of work" with a high degree of autonomy and flexibility, enabled by the development of communication technologies and cloud services (Scully-Russ & Torraco, 2020, p. 69). However, even though global work is also often knowledge-intensive and autonomous, global workers are generally office-based employees who differ from digital nomads, whose aim is to reject outwardly imposed structures of traditional office work (Cook, 2020) and attempt to gain freedom through mobility (Thompson, 2019). Further, we focus on global knowledge workers rather than migrant workers, whose work is often hidden or invisible from publicity and who are working for lower wages, longer hours, and in worse conditions (Choudhari, 2020).

The literature on global teams and global work more broadly has focused on the communication and collaboration challenges elicited by working across national borders and time zones. These boundaries have been defined through concepts such as virtuality (Gibson & Gibbs, 2006), which refers to changing work environments that transcend boundaries of time, space, organization, and culture. It is important to note that in and of themselves, boundaries may or may not be problematic, and they may even present opportunities for innovation (Watson-Manheim et al., 2002). Geographical and temporal boundaries have, however, been found to be disruptive and create difficulties for knowledge sharing across locations (Cramton et al., 2007; Watson-Manheim et al., 2012) as well as difficulties for building trusting relationships with distant colleagues due to the formation of divisive subgroups and faultlines (Cramton & Hinds, 2005; Gibbs et al., 2021a). Language and culture have also been found to create dividing lines in global work (Gibbs et al., 2021b; Hinds et al., 2014).

Boundaries are not always salient and not necessarily perceived as disruptions if they are managed through structures that provide continuity and lead to shared expectations around work practices (Watson-Manheim et al., 2012). For instance, Gibson and Gibbs (2006) found that virtuality features of geographical dispersion, electronic dependence,

national diversity, and dynamic structure were all negatively associated with team innovation, but that these relationships were mitigated by a psychologically safe communication climate, which allowed for teams to capitalize on their differences and be more innovative. Other supports for global work include perceived proximity (Wilson et al., 2008), team identification (Sivunen, 2006), and team communication practices that engage team members across sites (Gibbs et al., 2021b). This line of research has generally focused on office-based workers navigating boundaries imposed by the global work environment.

Boundary management in remote work
A separate line of research has studied challenges of navigating a different set of boundaries: work–home boundaries, which occur at the interface between workers' personal and professional lives. Much of this work has been grounded in Boundary Theory (Ashforth et al., 2000), which argues that people create, maintain, or change boundaries as a way to classify and simplify the world around them. This perspective recognizes that the work–home interface is a socially constructed boundary between the work and home spheres, and that maintaining it involves a process of boundary negotiation (Kreiner et al., 2009) or *boundary management*. In this view, individuals are active agents in the co-construction of boundaries in interaction with others, and boundary management involves negotiating experiences, interpretations, and the shaping of boundaries (Clark, 2000; Nippert-Eng, 1995). Thus, an individual's work and home boundary, its features, and its shared meanings are managed through social interactions and practices between actors (Kreiner et al., 2009).

Further, Work/Family Border Theory (Clark, 2000) proposes that people make daily transitions between separate domains of work and home and strive to avoid work/family conflict and maintain a sense of balance. Boundaries are seen as borders between different domains, negotiated in social interaction (Clark, 2000) and boundary management or boundary work (an overlapping but broader term that describes how individuals construct, dismantle, and maintain work–home boundaries; Nippert-Eng, 1995) can be defined as a process of this negotiation (Kreiner et al., 2009). While the Covid-19 pandemic has brought work–home boundary management to the fore by normalizing remote work, the concept of home-based work is not new. The early telework literature acknowledged the tensions faced by teleworkers (Hylmö & Buzzanell, 2002) and identified strategies used by teleworkers to calibrate the permeability of work–home boundaries (Ellison, 2004).

Boundary management through new communication technologies
While much of the boundary management research has not explicitly taken communication technology use into consideration, a more recent line of research has turned its focus to the role of communication technology in creating pressures for constant connectivity, due to the ubiquity of mobile devices and media. Given that mobile devices such as smartphones allow for employees to experience being available anywhere and anytime (Wajcman et al., 2008), this creates expectations that employees are always available to respond to work messages and remain constantly connected to work. Constant connectivity has been found to be negatively related to

employee's well-being through diminished psychological detachment (Büchler et al., 2020) which refers to the ability to mentally disengage from one's work outside working hours. On the one hand, this may lead to greater experiences of stress and burnout (Barley et al., 2011). On the other hand, the need for after-hours connectivity in global work can also reduce exhaustion by giving employees increased sense of autonomy and control over when, where, and how they work (Van Zoonen et al., 2023).

While the affordances of digital media, and mobile devices in particular, may encourage greater connectivity to work outside working hours, research is mixed on whether such communication technologies serve to increase organizational control by pressuring employees to work more at home or help them reduce work–home conflict through greater control over where and when they work. Some research finds that communication technologies may also be used for boundary-setting behavior to help manage transitions between work and home role domains and limit excessive connectivity (Matusik & Mickel, 2011). Organizational norms such as expectations for after-hours connectivity have also been found to play a key role in employees' boundary control practices (Piszczek, 2017).

Studying how workers engage in boundary management in light of increasing globalization is important as the way global work is carried out has implications for the well-being of employees (Schlachter et al., 2018). Blending the above literatures is important as the management of work and life is enabled and constrained by the larger organizational and cultural contexts in which workers are embedded. Missing from the literature is an integration of the various types of boundaries (global work and work–home boundaries) and more explicit theorizing of the role of communication technologies in boundary work and the types of boundary management strategies they afford.

Theoretical framework

Previous research has shown that connectivity outside working hours blurs the boundaries between work and home and can cause work–home conflict (e.g., Derks et al., 2016). Employees in global organizations, however, are often required to be connected after work hours due to the need to work across time zones (Lirio, 2017) in ways that are conducive to both work and personal life (Scott, 2013). While communication technologies such as smartphones and social media may create pressures for constant connectivity (Gibbs et al., 2013), their use is also conditioned by social norms including the organizational culture and team practices. To account for connectivity pressures arising from the material features of the communication technologies as well as the social norms, perceptions, and goals that global workers bring to their use, we adopt a framework of sociomaterial affordances (Fayard & Weeks, 2007; Gibson, 1979; Treem & Leonardi, 2013) to examine what we term *boundary affordances*, in particular.

Gibson (1979) initially defined an affordance as a possibility for action, to explain why different species perceive objects in the natural environment differently. This concept has become a fertile theoretical framework for scholars who are studying the usage of new communication technologies in organizational settings (Evans et al., 2017; Rice et al., 2017). Affordances have been theorized as a relational concept in which technology use can be explained by a combination of the material features of the technology and the subjective perceptions and goals of the user (Treem & Leonardi, 2013). In contrast to research that regards affordances as inherent in the design aspects of an object which inform how it should be used (Norman, 1998), we apply a relational notion of affordances (Hutchby, 2001; Treem & Leonardi, 2013) which recognizes that "affordances emerge through direct interaction with technologies" (Evans et al., 2017, p. 37) and other material features.

A rich literature has explored the affordances of enterprise social media and other communication technologies for organizational processes such as knowledge sharing, self-presentation, and team learning (e.g., Ellison et al., 2015; Gibbs et al., 2013; Treem & Leonardi, 2013). While prior literature has emphasized affordances of communication technologies, we expand the notion to include affordances arising from the material (e.g., spatiotemporal) environment. As such, we refer to sociomaterial affordances (on sociomateriality, see e.g., Leonardi, 2012), rather than technological affordances. In affordances theory, the affordances of a (spatial or technological) environment can be summarized as the possibilities for action called forth to a perceived subject (Fayard & Weeks, 2007). Thus, employees' perceptions of different sociomaterial features—whether grounded in communication technologies or organizational spaces—call forth various boundary affordances that enable and constrain global workers' boundary management practices (see also Sivunen & Myers, 2022).

In this study, we apply the affordances lens to the study of boundary management in global work, with a focus on boundary affordances—which we define as possibilities for action that shape communicative strategies for managing both global work and work–home boundaries. We examine the role of sociomaterial affordances in boundary management and the ways in which global workers manage boundaries in both global work and work–home domains. This leads to our research questions:

> RQ1: How do global workers manage boundaries through boundary affordances?
>
> RQ2: How does the shift to remote work shape the boundary management strategies of global workers?

Methods
Participants
This qualitative study draws from 55 in-depth interviews of employees working in nine different global teams in a large natural resources company called NRG (pseudonym), headquartered in Northern Europe. The global company produced, processed, and marketed natural resource products and provided engineering services and production technologies to its customers. The company employed altogether almost 5,000 employees across the globe. Over 75% of its employees were white-collar workers or senior managers with knowledge-intensive, highly autonomous jobs. The teams' tasks were varied, ranging from finance to logistics, marketing, procurement, and sustainability development, and job titles varied from managers to coordinators, specialists, analysts, and controllers. The teams were geographically dispersed, with team members located in various countries in Europe, the United States, and Asia-Pacific. Their official working hours were 40 hr per week, typically 8–4 p.m. or

Table 1. Team characteristics

Team	Number interviewed/number of team members	Team locations	Type of work
A	4/4	Asia and Australia	Developing raw materials
B	5/8	Asia and Australia	Sourcing of raw materials
C	5/5	Asia and Australia	Managing accounting entries and financial performance
D	9/9	Europe, Asia, and the United States	Providing logistics services
E	10/10	Europe, Asia, Australia, and the United States	Auditing suppliers and building a sustainability portal
F	6/7	Europe and the United States	Managing accounting entries and financial performance
G	8/19	The United States	Handling operations with different terminals
H	4/4	Sweden and Finland	Managing public relations
I	4/4	Finland	Managing internal communications

9–5 p.m. The interviewees represented a mix of functions and units, age, gender, and company tenure. Of the 55 participants, 23 were female and 32 were male and their ages varied from 24 to 63 years. Their average tenure in the organization was 3.6 years, with the shortest tenure being less than a year and the longest more than 40 years. Table 1 summarizes the team characteristics.

NRG's organizational culture highly valued the autonomy of workers, as well as a balance between workers' professional and personal lives. Company policies imposed strict boundaries between employees' work hours and personal time, and even though NRG operated globally with different work time regulations in different sites, these values permeated the organizational culture. In NRG's sustainability report, the company espoused a commitment to flexible work and remote work with the goal of enhancing work–life balance and well-being. Team members made extensive use of communication technologies to carry out their work. The company had newly implemented a suite of communication technologies consisting of Google Workspace (email, instant messaging system, meeting tools, shared files) and an enterprise social media platform to facilitate global connectivity and encourage more transparent, collaborative work. Team members communicated with each other in a variety of ways through these new communication technologies as well as through WhatsApp and phone calls.

Data collection

Data were collected through semistructured in-depth interviews, conducted via Google Meet or Zoom video conferencing platforms between October 2020 and August 2021. During these 10 months of interviewing, the Covid-19 pandemic shifted interviewees' work configurations from full lockdown and WFH configurations to hybrid work modes where both office-based work and WFH were expected. The lockdown measures also varied across organizational sites depending on that region's phase of the pandemic.

Before each interview, participants were given information about the study and asked to sign a consent form. The interview protocol consisted of themes including information seeking and sharing, use of different communication technologies, connectivity expectations and boundary management practices within the global team, and global work and well-being. Questions such as "Can you give an example of a situation when someone from work reached out to you before or after your workday, and how you handled that?" or "Have you discussed connectivity expectations in your global team?" provided in-depth information about interviewees' boundary

management practices both at an individual and team level. The interviews were conducted by three members of the research team, two of whom are authors of this study. They lasted from 52 to 134 min, with an average of around 75 min. All 55 interviews were transcribed verbatim resulting in 2,058 double-spaced pages of text.

Data analysis

The analysis was carried out using a qualitative, phronetic analysis method (Tracy, 2019) which consists of an iterative process in which the empirical data and theory are in dialog. The process involved both a data-driven analysis and a theory-driven analysis based on Boundary Theory (Ashforth et al., 2000; Clark, 2000) and affordances (Evans et al., 2017; Treem & Leonardi, 2013), drawing on the concept of boundary affordances (affordances for boundary management) as a core-sensitizing concept in our analysis. While our process was highly interactive and moved back and forth between data and literature as we unearthed interesting concepts in our data and worked to inform them with theory, for the purposes of clarity and conformity with journal conventions, we have reduced our analysis to three key stages of coding (Tracy, 2012).

First, open coding was carried out using thematic analysis (Braun & Clarke, 2006) with the qualitative analysis software Atlas.ti. This made it possible to compare data and examine the relationships between smaller issues and broader phenomena. The first-level coding was initially applied to only part of the dataset, after which the emerging coding scheme was used to analyze the rest of the data (Tracy, 2019). In the first-level coding, we identified how informants talked about their work and the various boundaries they faced in their teams, whether the team had discussed issues related to connectivity outside working hours, and how communication technologies were used. This analysis was done on a team-by-team basis.

While we were initially sensitized to the concept of boundary affordances going into the analysis, specific strategies for boundary management emerged in our second level of coding, and we began to compare and contrast these various tactics. At this stage, codes were reviewed, connections established between them, and descriptive categories were developed into second-level analytical categories (Tracy, 2019). For example, descriptive first-level codes such as "choice of medium (phone, WhatsApp, Google)" and "indicating expected response time in email" were formed into a second-level category, a strategy called "signaling urgency." Similarly, first-level codes such as "switching off notifications" and "use of different devices for work and personal communication"

formed a second-level category, a strategy called "vacillating between domains."

Finally, we explored how global workers drew on boundary affordances through various strategies to manage boundaries in global work. In comparing the various boundary management strategies we identified, we observed that some of them were used to erect boundary support, while others were used strategically for boundary collapse. We grouped the strategies into the selective categories of *boundary support* and *boundary collapse* strategies. In this stage, we also looked for relationships between management of global work boundaries and work–home boundaries and how each type of strategy was enabled by various sociomaterial affordances stemming from the communication technologies, spatiotemporal features of work, as well as the organizational culture and WFH policy. Figure 1 presents our coding structure and helps to explain how we moved from first-level to higher-level coding. This process helped us to create our emergent theoretical framework, which is presented in Figure 2. In the *Findings* section, all the quotes originally in a different language than English are translated to English, pseudonyms are used for all participants, and all identifying details are modified to protect confidentiality.

Findings

Our analysis revealed that global workers drew on sociomaterial affordances (both technological and spatiotemporal) to manage global work and work–home boundaries through strategies of both boundary support and boundary collapse. We will now unpack the various strategies used for boundary support and boundary collapse, as well as the affordances of each and how they were used to manage both global work and work–life boundaries. Finally, we show how both global work and work–home boundary affordances facilitated by organizational values led to boundary support, while the shift to WFH directives brought about by the global pandemic created challenges due to boundary collapse—but also presented new sociomaterial affordances that created unexpected benefits for managing both global work and work–life boundaries.

RQ1: Affordances for boundary support

In general, the company culture created strict guidelines and norms around maintaining rigid boundaries between work and home domains in order to preserve work–life balance, and global workers tried hard to preserve these rigid boundaries through boundary support strategies. Our analysis revealed two boundary support strategies that facilitated global work boundary management (signaling urgency and increasing availability awareness) and two boundary support strategies that facilitated work–home boundary management (vacillating between domains and respecting private time), which relied on technological as well as spatiotemporal affordances.

Signaling urgency

Signaling urgency was perceived as an essential boundary support strategy in managing global work boundaries. As working across geographical and temporal boundaries meant that colleagues' location or phase of the workday was often difficult to predict, it was important to calibrate the level of urgency when sending messages to global team members. According to members of several teams, it was a common practice for senders to indicate in their messages whenever

they were expecting an immediate response or reaction. Signaling urgency as a boundary support strategy gave the whole global team an understanding of how quickly to take action after receiving a message. As Yusuf, a manager from Team A, described, "Someone sent an email to maybe five of us saying 'can you please help me to fill in this lease or check sheet. Appreciate if you can reply by next Friday'. Okay. So immediately we know that as long as we reply before next Friday that's fine for that person."

Signaling urgency by explicitly mentioning expected response time in one's messages enabled global team members to better manage their workload despite the geographical and time zone differences. Team members also drew on technological affordances and developed shared meanings around the perceived urgency of various media, and they used their choice of communication medium to signal urgency. As Kevan from Team B stated, "we had one exercise before on this. It was agreed that for important calls, you can call us directly on your phone. If it's not so urgent then you can drop us a message on WhatsApp and email and we will reply accordingly."

As this example shows, signaling urgency was often explicitly negotiated within the team and enacted through the choice of communication technology. In general, phone calls were reserved for more urgent messages, followed by instant messaging (WhatsApp, Google Hangouts), whereas email was considered less urgent. As Thomas from Team A explained: "with emails... you generally wouldn't expect a response till the next day." Interestingly, email was used in a more traditional, asynchronous way, whereas other asynchronous communication media, such as instant messaging, were used more synchronously as "the quickest way to reach the person and it's pretty standard practice" (Frans, Team H). Team E's leader explained that chat was mostly used for urgent messages: "If it's something critical, most of the time it's through chat." This could be further explained by the material features of the devices used, as email was usually used on one's computer (which people generally left in the office, prior to Covid), whereas instant messaging applications were used more commonly on participants' smartphones (and were thus more likely to be checked outside of the office).

In this way, signaling urgency was a boundary support strategy in managing global work boundaries that was enacted by technological affordances, intertwining technological features with sociomaterial practices. Both the immediacy and materiality enabled by the medium and devices used as well as the ways global employees explicated and interpreted the response expectations associated with the message mattered in signaling urgency.

Increasing availability awareness

At NRG where a large proportion of employees worked in global roles, several informants mentioned the need to be aware of colleagues' availability across global work boundaries. Preserving organizational cultural norms required that the time zones where dispersed colleagues worked were ingrained in employees' minds. Workers in global roles had a clear sense of what time their European, United States, or Asian colleagues could be reached. Zack, a member of Team G located in Texas, USA, described the ways he could reach his Belgian colleagues: "If we want to communicate on the chat, I can send them a message anytime between like 6 a.m. my time and 10 a.m., and they will probably respond." Xin, a member of Team E located in Singapore described his
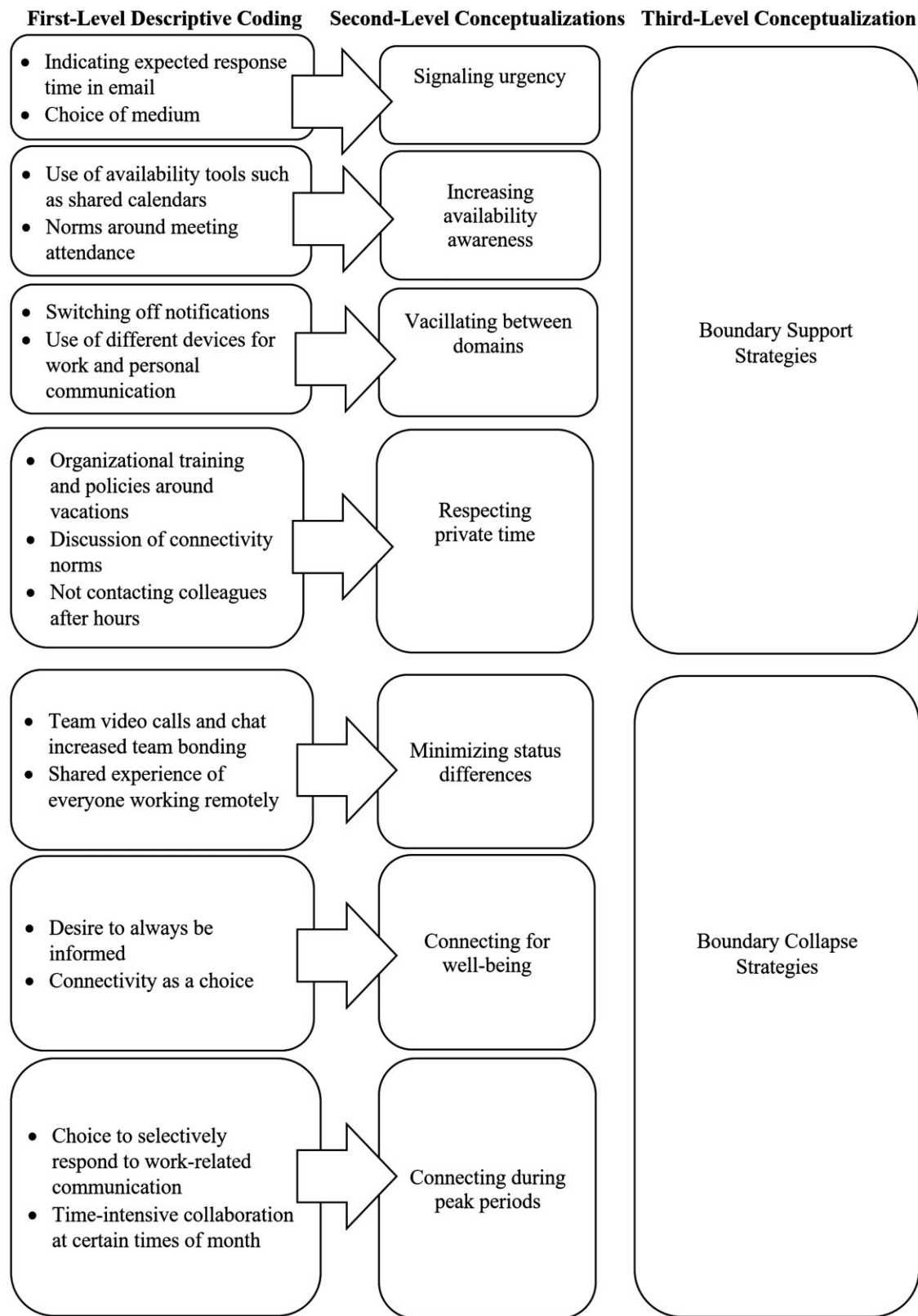
First-Level Descriptive Coding   **Second-Level Conceptualizations**   **Third-Level Conceptualization**

Figure 1. Coding of the interview data.

communication as follows: "I will not contact our Finland colleagues in the morning, in my morning time zone because that is too early for them so I will not do that. I only contact them the second half of my day, so that is the morning in Finland."

These global workers drew on the boundary support strategy of increasing availability awareness in managing global work boundaries. They did this by drawing on technological affordances, such as those provided by digital calendars and instant messaging tools. Thomas, a manager based in
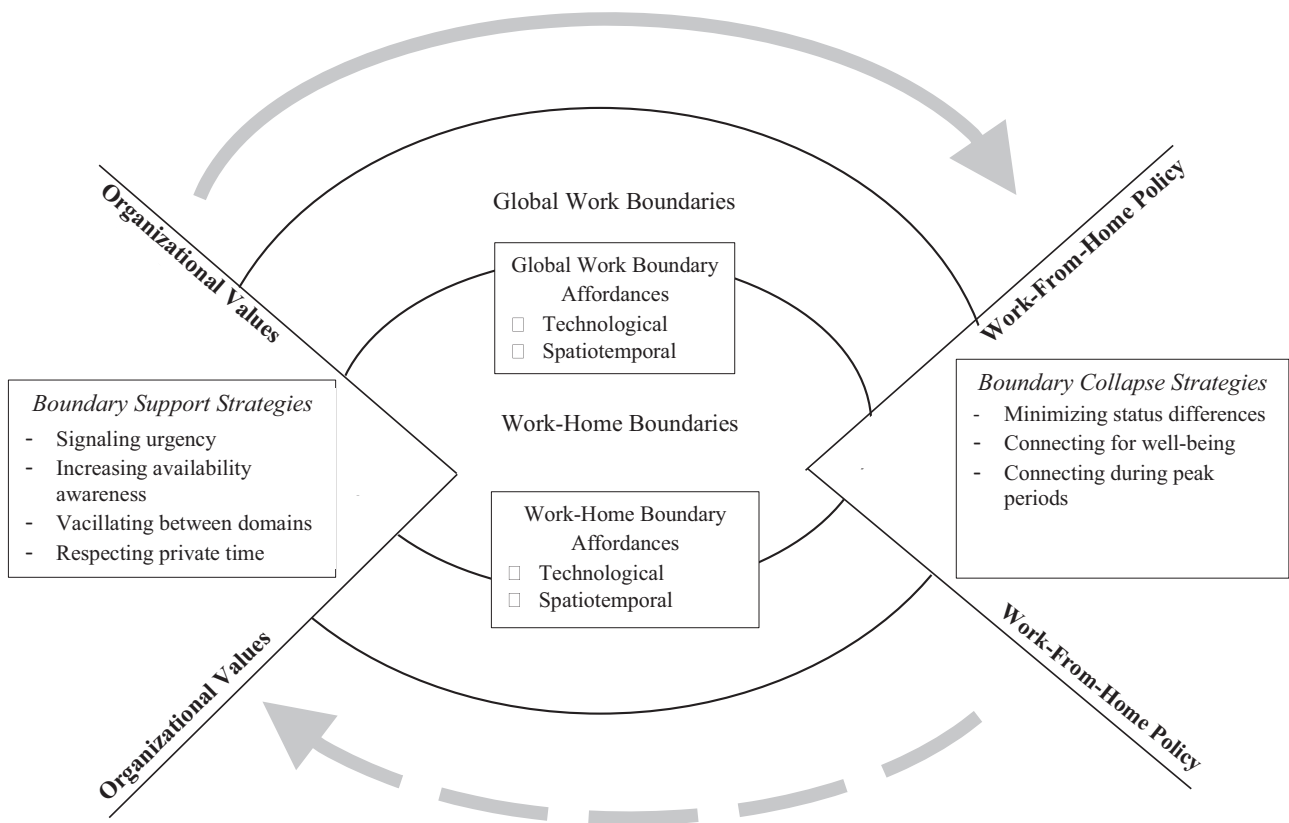
Figure 2. Emergent theoretical model.

Australia who worked in Team A, stated that he always marked his work hours in his Google calendar. This indicated to others when he was not available and was also a signal that he could not respond to their messages immediately. Another way to make colleagues aware of one's availability (and unavailability) was to use the shared calendars but block out one's own time outside office hours. Patrick, a manager located in Australia in Team B, said that "I've just had to get a little bit stricter with how I manage my calendar. So, I've essentially blocked out my calendar from 6 p.m. and stopped responding after 7 p.m." Similarly, instant messaging systems could also be used to increase others' awareness about one's availability. Nadja, based in Finland in Team E illustrated the way the time settings of the instant messenger could be used to block messages at certain times: "In chats you can set the times that you are away. So, they just get bounced off if you were to contact them at a certain time."

Again, it was the technological affordances including both the material features of the communication technology in tandem with social practices and norms of the organization that enabled availability awareness. Awareness of colleagues' global work boundaries was signaled through joint discussions in teams and across global sites and through this increased awareness global work boundaries were respected:

> You'll even hear it whenever you're talking to someone: "I wonder if so-and-so knows about this, can you text or instant message them really quickly?" And they may say "I think they're on vacation." Then I would say "okay, we'll catch them whenever they're back." In that case I didn't know…what that person's schedule was, but the point is that there is a good respect around that. (Adam, Team D)

Notably, a large majority (45 out of 55) of the informants seemed to be aware of their colleagues' availability in general and this was commonly discussed in teams. The fact that many would not even use asynchronous media such as email to contact coworkers in other time zones outside of their work hours underscored the management of global work boundaries maintained by the organizational culture and the strong boundary support strategies that were in place.

Vacillating between domains

Work–home boundary support strategies differed from global work boundary support strategies in that the former were centered around individual workers and their well-being through the use of different communication technologies, organizational and home spaces, and social practices. The boundary support strategy of vacillating between work–home domains consisted of separating work–home domains and alternating between them. A team leader located in Finland described switching off group notifications while at work to separate work and home domains and to remove distracting extra stimuli created by communication technologies:

> As a mother of three children who are very active in their hobbies, there are a million [online] hobby groups and school groups and parents' groups. I often remove these notifications [from those online groups] during the work day, because sometimes they flash everywhere. (Alma, Team I)

Global workers relied on technological affordances in several ways to draw a sharp separation between work and

home domains by using different devices for work and personal communication, often to keep work from spilling into their home life. Some reported using separate mobile phones for work and personal use, or changing out the SIM card when they went home: "I've got my personal and business SIM in the phone so I've got two connections … often at night time I'll disable the G Chat [Google chat] for 12 hours" (Patrick, Team B). Others mentioned leaving their laptop at work and just using their phone at home, disconnecting during dinner, screening but not replying to email after hours, putting their phone in airplane mode, not checking their work phone on the weekends, and deleting Google applications while on leave. All these strategies allowed them to separate work and home domains and focus on one at a time.

Vacillating between work–home domains also meant that employees sometimes extended their workdays by attending to family issues or their own hobbies during the day and continuing their work day into the evening. In this way, they drew on spatiotemporal affordances of their physical home/office space as well technological affordances of mobile phones and laptops to split their day into sections where they could focus on work or personal issues. Johanna, located in China, illustrated her ways of splitting the long workdays into sections to be able to maintain well-being and increase energy when needed: "Sometimes… I realize 'Oh, I've got a meeting at 9 pm, shoot, well, I'll go home in the meantime and go to the store and to the gym and take a shower' and then at nine I have renewed energy and can work again" (Johanna, Team C). Further, vacillating between life domains was a work–home boundary support strategy that required employees to have enough autonomy to decide when and where they worked. Indeed, for many employees, this seemed to be the case. As Sebastien, a logistics manager in Belgium explained:

> I have the possibility [to disconnect from work] every moment. Every minute of the day I would say … If I feel it's not good anymore at this moment I will call [Name] for example and say okay I'm going out for one day or whatever. Or I take a one-week vacation … There's total freedom, or almost total freedom. (Sebastien, Team D)

Even though Team D worked in logistics, which often required connectivity around the clock, team members felt they had enough autonomy to attend to work–home domains as they wished.

Thus, the boundary support strategy of vacillating between work–home domains was managed by drawing on technological affordances to turn off notifications and use separate devices for work and personal communication, and drawing on spatiotemporal affordances to design workdays to be started or continued at home to work around family obligations or disconnect for their own well-being. This strategy was also facilitated by the organizational culture, which provided global workers with the autonomy needed to control where and when to conduct their work.

Respecting private time

Even though the strategies for managing work–home boundaries appeared to be personal in many ways, revolving around time management and self-discipline, they were heavily embedded in organizational values and shared norms. A second home–work boundary support strategy of respecting private time was also heavily embedded in the organizational culture. All of our interviewees emphasized the importance of respecting each others' private lives. This was reflected in this response from a team member from India:

> The only thing that can hinder working with a global organization is the time difference and managing your working hours, but … that is well respected at NRG and we have our own calendars to mark our working hours and set our meetings. So everyone respects that and follows that accordingly. (Harish, Team B)

Global workers drew on the technological affordances of individually managed but shared electronic calendars to enact the strategy of respecting each others' private time. This work–home boundary support strategy was influenced by the shared global organizational culture and values of NRG, which were perceived to reflect "European values" or the "Nordic way." Venla, a European manager located at NRG HQ, described that because it was in a central time zone in the Nordics the HQ time was very well respected, but felt the value of respecting private time also extended to other sites:

> We have a certain understanding that before 8:30 am we usually don't book any meetings [for the people in the HQ].—And we know that after 12 pm [HQ time] no meetings are booked in Asia [6 pm in Asian sites]. And then again in Houston, we know that the meeting time is at 4am or 5am at the earliest, and no one books meetings earlier in Houston. And they won't book a meeting after six pm here [in HQ]. (Venla, Team E)

The company had strong norms about not contacting colleagues after work hours (e.g., evenings, weekends, and vacations), and this was reinforced by top management. Vera, a communication manager, described: "At NRG, holidays are respected even in the top management team. There has to be like a super emergency if someone is contacted while on holiday." Employees also mentioned being offered well-being coaching by the company to help them manage work–home boundaries, and their supervisors often reminded them about the importance of taking breaks and vacations. Connectivity norms were also explicitly discussed in the team, and constant connectivity was not expected. This way, respecting private time was a strategy that was facilitated by technological affordances enabling disconnecting during evenings and on holidays. Hence, the work–home boundary support strategies relied on mainly technological but also spatiotemporal affordances, and they were reinforced by an organizational culture that heavily valued autonomy and privacy.

RQ2: Changes in boundary management due to Covid-19

The Covid-19 pandemic and the strict WFH policy it necessitated created a disruption that conditioned the ways global workers at NRG were able to manage their global work and work–home boundaries. As our data were collected during the early stages of Covid-19, we were able to capture some of the ways in which it was changing boundary management practices. The WFH policy created both unexpected benefits and challenges for global work and work–home boundary management. Whereas the organizational culture provided

support for both global work and work–home boundary management, the new WFH policy created a change in the spatiotemporal affordances available to global workers such that they had to contend with new ways of managing boundary collapse, which presented challenges but also enabled new strategies that helped improve their workplace and personal well-being.

Increased emphasis on spatiotemporal affordances

While the mandatory shift to WFH configurations caused by the Covid-19 pandemic made it easier to work across global boundaries by collapsing them, this boundary collapse also posed challenges for global workers in terms of the management of work–home boundaries—which had previously been managed through vacillating between work and home domains as well as respecting private time. Thomas, a member of Team A, felt it was impossible to alternate between domains as working from home eliminated the transition between office and home space through cycling home from work, listening to podcasts, or doing physical exercise. In the so-called Covid world, everything happened within the same walls. With work–home boundaries being so porous, most workers reported that their work computer was always open and they were monitoring communication outside working hours more often. As Simo from Team C put it, "when you would leave the office [pre-Covid], it was like a sign that 'okay, now the job is done' and often you would work on the subway with your mobile phone, and it's when you walk home from the subway station that … the job is done." In this way, the office and accompanying commute presented important spatiotemporal affordances that served to mark the end of work and signal that "the job is done."

Employees recounted that in WFH mode, they began to work more in the evenings partly because in a world locked down by the pandemic, there was little else to do. Sebastien, a Belgian member of Team D, stated he usually stopped working at the request of his spouse, but often returned to work in the evening because "for me there's nothing else at this moment. The children are not allowed to visit us." Team E member Nicolas from Australia also felt that work played a more significant role in the Covid world and felt he did not have "many tools to disconnect." Working in the evenings also became more acceptable as the strict organizational norms began to shift and workers started responding to messages outside working hours. This is how Kevan from Singapore described the change:

> I think what has changed is that the working hours are stretched out… So in a sense we work later than previously when we knocked off work at six…people know you're not gonna go anywhere during Covid so, might as well do calls and some work outside of working hours as well. (Kevan, Team B)

Particularly at the beginning of the pandemic, for some workers, the collapse of boundaries in the shift to remote work meant complete overlap between their personal and professional lives. Lucy, an American member from Team E, described it thus: "With Covid it's a very peculiar situation and my son has been participating in a lot of meetings and I think that they [colleagues] understand that he's around. So it's definitely mixing my life with my work" (Lucy, Team E). In this way, the WFH policy resulted in a change in

spatiotemporal affordances that collapsed geographical location differences. This resulted in challenges for work–home boundary management by making it more difficult to enact boundary support strategies to create separation between domains and respect one's private time and privacy. Having full overlap between one's personal and professional lives was challenging especially for parents, and increased awareness of colleagues' daily lives through video calls eroded their rigid work–home boundaries.

In other ways, the spatiotemporal affordances of working outside the office helped support management of both work–home and global work boundaries. While boundary support strategies were more common overall due to their reinforcement by the organizational culture, the WFH policy made it more difficult to enact boundary support strategies and led to the emergence of new boundary collapse strategies that had (perhaps unexpected) benefits for managing both global work and work–home boundaries by helping reduce status differences, increasing well-being, and improving cross-boundary coordination. The new WFH configurations thus helped global team members become even better connected despite space and time differences. We now discuss three such boundary collapse strategies: minimizing status differences, connecting for well-being, and connecting during peak periods.

Minimizing status differences

The collapse of spatiotemporal boundaries due to the WFH policy helped to enhance team empathy and reduce subgroup differences through a strategy of minimizing status differences. Some employees reported that communication between team members improved due to WFH, along with their awareness of what each team member was doing while working from home. Martin, based in the United States, described this change as follows:

> Ever since we've had Covid, to be honest, I think it's actually been better than before. Before … we had no assigned seats so you could just go into the office and sit anywhere you want, meaning I wouldn't necessarily be with my teammates. I wouldn't maybe collaborate them on a daily basis, but since Covid we've had to have these calls and we've bonded a lot better. (Martin, Team G)

Martin was referring to the company's policy of hotdesking, in which employees did not have designated desks and did not necessarily sit with their teammates while in the office. In this way, the spatiotemporal affordances of hotdesking may have unintentionally worked against team collaboration, whereas having everyone WFH presented new spatiotemporal and technological affordances that helped improve team collaboration and bonding. For one, the shared experience of everyone working from home was reported to increase team understanding and empathy by helping previously office-bound employees from HQ put themselves in the shoes of team members who had previously worked alone in remote locations. Kiia, a manager in Team E, described the situation as follows:

> Half of our team has been sitting in [HQ]. We have seen each other every day and sat in team meetings [together] and we have kind of lacked the understanding that our [global] colleagues are always sitting alone at their computers. Now we are all more in their position, so it has

forced us to think about how we use digital tools so communication is effective. (Kiia, Team E)

WFH arrangements also minimized status differences by helping overcome traditional challenges of global work, such as subgroup dynamics. Team D member Adam from the United States pointed out that "the whole team is able to speak and communicate at the same time. Everyone can hear, it's very much like if we were in a conference room." The discussion in the virtual environment was not just between two people, but everyone was aware of it. Ilona, located in the United States in Team G explained the importance of this: "We should try to get the others involved so that the discussion would . . . always be visible to everyone in the team." As workers could not meet face-to-face, virtual meetings took on greater importance.

As the above examples illustrate, WFH arrangements created changes in both spatiotemporal and technological affordances that resulted in global team members becoming more connected through video calls and having everyone log in from their home computer helped reduce geographical status differences between those in HQ and subsidiaries and increase empathy and understanding by normalizing remote work.

Connecting for well-being

The connectivity afforded by communication technologies was seen as an essential part of enabling well-being and happened through strategic boundary collapsing. It was seen as an individual choice for workers to either be connected and engaged in work or to disengage and disconnect. Often the underlying perception was that connectivity provided by communication technology helped improve job satisfaction, productivity, and overall well-being. Hugo, a logistics manager in the Netherlands, puts it as follows:

> My well-being is being connected. I told my manager the same thing . . . When everything is going past me, then my well-being is not, well. [laughter] So, it's my wish to be connected. Yeah, you have to work more hours but that's for me the only way to do this, and I feel happy with it. (Hugo, Team D)

For global workers, boundary collapse strategies allowed them to manage global work boundaries which they saw as an enabler of well-being, not a constraining factor. However, it was not about the need to be available all the time or the need to work around the clock, but rather more about being able to control the connectivity enabled by communication technology and to adapt it to one's own needs for promoting well-being. Allen, a member of Team F located in Texas, USA, described his own connectivity and strategic boundary collapsing as a "circle" and said:

> Because I like my job, I want to succeed at my job. . . And because of that, I'm more eager to be connected, so that when I get requests at 8 pm I don't mind doing it. . . it's almost like it continues as a circle, like my well-being is connected to my work. If I wasn't enjoying what I did, then obviously those 8 pm requests and midnight requests would bother me so much that it would affect my well-being, right? (Allen, Team F)

By strategically collapsing boundaries, workers were able to take advantage of the technological affordances that enabled connectivity and contributed to well-being. Connecting for well-being was a strategy that aligned with employees' preferred way of working. Lily, who worked as a manager in a small team in Sweden, said that she had always been in positions where she had to be always connected. She commented that "honestly, for me it works, being available all the time, but then, you know when I have my vacation, when I take time off, then I take time off." In this way, collapsing work–home boundaries through making herself always available while she was working enhanced Lily's well-being—but she also set strict boundaries while on vacation of not working at all.

Connecting during peak periods

Another boundary collapse strategy involved selectively connecting to work outside working hours during specific times, such as peak periods. Kasandra, who worked as a controller in Team F located in Texas, USA, reported that at certain times (such as the end-of-month closing) that required closer and more time-intensive collaboration across global locations and time zones, she regularly worked additional hours to enable smoother coordination of work with teams located in different time zones. She stressed that making herself available outside working hours was a voluntary choice and not a requirement imposed by anyone:

> During the closing we work with teams based in Asia. We have a lot of intercompany transactions, so I make myself available at night so that we work together and then in the morning when Finland is open, they are able to close the books. So nobody has told me "you have to do it" but I do it out of my own choice. (Kasandra, Team F)

In this strategy, technological and spatiotemporal affordances such as the immediacy of instant messaging and the ability to WFH at nights enabled boundary collapse without workers experiencing major challenges in terms of work–home boundary management. A controller from Team F, Rafael, explained that "one week per month is the moment that I am open for business 24 hours a day . . . maybe I'm not in front of computer but I take my phone with me, I'm watching TV and at 8 pm I see a message 'hey, I have this issue, can you help me with that'. . . so I know it's time to close Netflix and get in front of the computer." Due to the cultural value of autonomy as well as the short-term nature of the work, workers did not feel constrained by having to be available for additional meetings, questions, and work tasks during peak periods.

The new WFH policy thus resulted in a change in the spatiotemporal affordances available to global workers, presenting challenges for boundary support while enabling new strategies of boundary collapse that helped to improve their workplace and personal well-being.

Discussion
Theoretical implications
To structure our discussion of the study's implications, we built a conceptual model based on our findings (Figure 2). The model shows that global workers need to navigate both

global work boundaries and work–home boundaries. Prior to Covid-19, these boundaries were primarily managed through strategies shaped by organizational values in tandem with technological and spatiotemporal affordances that created *boundary support* by working to uphold clear work–home boundaries. Post-Covid, the WFH policy changed the spatiotemporal affordances (through the transition from office to home), challenging but also benefitting boundary management through new *boundary collapse* strategies. This model presents several contributions to the literatures on global work, boundary management, and affordances by identifying ways in which both technological and spatiotemporal affordances elicit boundary support and collapse.

We found that global workers drew on boundary support strategies—enabled by both technological and spatiotemporal affordances—to manage boundaries that were supported by organizational values of autonomy and privacy to attend to and regulate the urgency of work and create awareness of coworkers' availability. Given that the global HQ was in a Nordic country, the organizational culture heavily valued individual autonomy, privacy, and work–life balance (e.g., Wieland, 2011). This resulted in boundary support strategies, that is, organizational practices to impose rigid work–home boundaries. The value on autonomy meant that individual workers were free to choose when and how to manage their work boundaries, but they also attempted to respect the work–home boundaries of their coworkers. However, the WFH arrangements worked to undermine the clear work–home boundaries of global workers by changing the spatiotemporal affordances and leading to boundary collapse. While this created challenges, it also resulted in beneficial boundary collapse strategies. While some of these strategies (e.g., connecting at peak periods) had existed prior to the WFH policy, boundary collapse strategies increased after it was implemented. At the time of our study, it remained unclear whether this would result in enduring change to the strong organizational norms or whether they would remain resilient in light of this disruption. For this reason, we present the recursive relationship from boundary collapse back to boundary support as a dotted arrow, as this requires more data to confirm. At the end of our study, it was unclear whether the organizational structures in place would eventually help to re-erect rigid boundaries or whether the new WFH arrangements would transform the organizational culture by normalizing flexible and permeable boundaries.

Global work benefits

While the challenges of both global work and remote work have been well documented, this is one of the first studies to combine the global work and work–home boundary management literatures, which have largely been separate. We found that while the shift to WFH arrangements due to the Covid-19 pandemic created challenges for global workers by collapsing their formerly rigid work–home boundaries, it had other unexpected benefits for managing both their global work and work–home boundaries. One of the communicative boundary collapse strategies, minimizing status differences, was used when employees had the chance to communicate equally with everyone in their team due to the WFH restrictions. Office layouts no longer determined who worked close to one another, but technological and spatiotemporal affordances were used to collapse boundaries and to connect more often and equally to all team members. The universal WFH policy

raised awareness and understanding of the experience of working remotely, which before had been confined to workers in remote locations. In this way, the collapse of global work boundaries resulted in increased empathy for distributed coworkers as well as helping to minimize status differences.

This has important implications for research on global work. The global team literature has identified challenges of knowledge sharing and relationship formation across geographical locations and time zones (Cramton et al., 2007; Watson-Manheim et al., 2012), including the formation of subgroups and status differences across sites (Cramton & Hinds, 2005; Gibbs et al., 2021a). Our findings suggest that working globally has become normalized to some extent, as our participants faced few challenges working across global boundaries and expressed little concern about such issues. Further, they suggest that WFH arrangements may even help overcome traditional global work challenges such as subgroup dynamics by equalizing the experience and participation of global workers and erasing location and geographical cues that are more evident when they are working in the office. These subgroup dynamics and social categorization processes (Ashforth & Mael, 1989; Gibbs et al., 2021a) may be further complicated by new forms of hybrid work, which may create new divisions between employees who are in the office and those working from home. But the shift to remote work for our participants made global work boundaries easier to manage.

Affordances, boundary flexibility, and the future of work

WFH arrangements created both difficulties and benefits for managing work–home boundaries due to boundary collapse. Perhaps ironically, our participants may have faced greater challenges in managing work–home boundaries due to their strong organizational value on maintaining rigid and impermeable boundaries in order to respect individual autonomy and privacy. While their boundary management practices were helpful in maintaining work–life balance, their lack of boundary flexibility and permeability made it difficult for them to adjust to the abrupt shift to remote work. Nevertheless, they were able to develop new boundary collapse strategies that helped with team bonding and cohesion. The boundary management literature has found that boundary flexibility is generally beneficial for work–life balance as it allows for individual choice in when to conduct work, whereas boundary permeability creates challenges by imposing competing demands (Ashforth et al., 2000; Clark, 2000). Our findings suggest that both boundary flexibility and permeability may be increasingly demanded by new remote work arrangements, and that adaptability to these demands is a feature of the future of work.

Flexible spatiotemporal boundaries have become an inherent feature of contemporary work (Sivunen et al., 2023). Interestingly, it is not always clear whether blurred spatiotemporal boundaries are more related to global work characteristics, employees' work–life demands, or their personal preferences. Global work boundaries are likely to become even more collapsed with work–home boundaries in the future of work, as advances in communication technologies afford even greater spatiotemporal flexibility. In light of this, this study makes an important contribution by integrating the literatures on global work and work–home boundaries with the literature on affordances. This helps form a more

complete picture of the various boundaries employees need to manage in the future of work where all knowledge workers (not just global workers) need to attend to various boundary affordances due to remote and hybrid work arrangements. Our findings highlight the importance of work–home boundaries for global workers (often ignored in the discussion of global work boundaries) and the role of sociomaterial affordances in boundary management.

Finally, our findings have implications for theory on affordances. We contribute the notion of boundary affordances, which are affordances that relate specifically to the management of boundaries. Further, we contribute an expanded conceptualization of affordances that includes both technological and spatiotemporal affordances. While much of the affordances literature has focused on communication technology as the source of affordances for organizing processes (e.g., Evans et al., 2017; Rice et al., 2017; Treem & Leonardi, 2013), our findings show that spatiotemporal affordances had a bigger impact on boundary management due to the move from office-based to home-based work, whereas the technological affordances remained mainly the same. In particular, the affordances of the office became more apparent once the WFH policy was implemented. Despite being global workers who could presumably do their WFH, our participants preferred to go into the office—not so much to interact with their coworkers as to keep their work and home life separate. This echoes earlier (and more recent) telework literature that finds that teleworkers struggle with the lack of work–home separation (Ellison, 2004) and with the lack of a commute to provide a "liminal space" to transition from one domain to the other (Wilhoit, 2017). Thus, it is important for affordance scholars and those studying the future of work to revisit this earlier literature and to broaden their notions of sociomaterial affordances to include spatiotemporal dynamics, not just technology use.

Our findings further emphasize the role of organizational culture in shaping sociomaterial affordances, as the boundary support strategies (in particular) were quite in line with cultural values of both the organization and the broader Nordic culture. Technological affordances also shaped use of the material features of instant messaging or email in ways that helped employees manage both global work and work–home boundaries through various boundary support strategies. Moreover, introduction of the WFH policy and the intertwined technological and spatiotemporal features created sociomaterial affordances enabling new boundary collapse strategies that benefitted employees. By showing how sociomaterial affordances evolved due to changing social practices and values (e.g., WFH policy) and new material features (e.g., working at home instead of the office), our study contributes to the literature on how affordances and their related boundary management strategies can change and evolve over time.

Limitations and future research

Our findings are not without limitations. First, we focus primarily on geographical and temporal boundaries, which proved most salient for the global workers in our study. While we did not find much evidence of other types of boundaries, such as cultural or organizational, future research should take into account a broader array of boundaries in considering boundary management in global work. Second, our study is limited to a single organization. Our participants were all knowledge workers who had a high degree of

autonomy in their work. As such, our findings are highly conditioned by the organizational context. We found this an interesting case as it was shaped by Nordic cultural values of work–life balance and individual autonomy and privacy. Further research should compare findings across a broader sample of global workers, as well as investigate boundary management in other types of new work settings, such as among digital nomads. Finally, our data were collected during the first year of the Covid-19 pandemic and shortly after the organization had adopted a new suite of communication technologies. It is possible that perceptions and behaviors will change over time as the spatiotemporal and technological affordances of WFH and hybrid arrangements continue to change. Future research should examine the reciprocal relationships between boundary management strategies and affordances as well as their consequences over time.

Data availability

The data underlying this article cannot be shared publicly due to the privacy of individuals and organizations that participated in the study.

Funding

Acknowledgments

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