

Temporal Sovereignty: How Family Time Demands Shape Interaction and Isolation at Work

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Abstract

Isolation in the workplace is widely documented as detrimental to employees as well as organizations. Experiences of isolation are understood to stem from individual, group, and work design factors. In this paper, we examine the role of time. Drawing on ethnographic data from 72 STEM professionals across three workplaces, we show how *temporal sovereignty*—the extent to which employees control family time demands—informs how workers interact with coworkers day-to-day, shaping their experience of belonging at work. Temporal sovereignty guides how workers initiate, organize, and manage interactions in the workplace. These interactions accumulate into different experiences of support and feelings of inclusion. Our findings contribute to understanding how factors beyond the individual and the workplace may contribute to experiences of isolation in the workplace. Further, our findings suggest practical means through which isolation may be anticipated and avoided by employees and organizations.

Keywords: isolation, time, temporal sovereignty, interactions, professionals

“I talk to my [co-workers] about personal stuff. ‘What’s going on?’ ‘How are you doing?’ I’m often in the office . . . Someone has to take care of my son and get him around. Most of that has fallen on my wife.”

“I want to be able to do science but I also want to be with my kids”

Introduction

Isolation in the workplace is widely documented as detrimental to individual employees as well as the organization. Isolated workers experience challenges to their health, work engagement, and organizational identification (Hershcovis et al. 2017). They may also exhibit lower job performance and investment in the organization (Bartel, Wrzesniewski and Wiesenfeld 2010, Gabriel et al. 2021). Experiences of isolation stem from three principal sources. Individual-level characteristics such as personality create variation in peoples’ abilities to connect and productively interact with each other (Howard et al. 2020). Group-level factors such as the behavior of coworkers (e.g., uncivil) that make interactions more or less pleasant inform experiences of isolation (Wright and Silard 2021, Hershcovis et al. 2017; Howard, Cogswell and Smith 2020). Further, one’s demographic “fit” (e.g., gender, race) with coworkers that make interactions less likely contribute to experiences of isolation (Ely 1994; Turco 2010; Phillip, Rothbard and Dumas 2013). Work demands (e.g., remote, gig) and job design shape experiences of isolation as they require more or less interaction and interdependence with co-workers (O’Leary and Mortensen 2010; Gajendran and Joshi 2012; Cameron 2021, Glavin, Bierman and Schieman 2021).

Each of these factors – individual, group, and work design – shape opportunities for and experiences of interactions at work. In taking interactions into account, studies of isolation have often implicitly prioritized the role of space over time, focusing on the implications of

copresence and shared space (e.g. Rockmann and Pratt 2015), even though a lack of shared space often means a lack of shared time. Yet, studies of time in organizations show that varied temporal orientations and preferences at work inform interactions with coworkers and teammates (Waller, Conte, Gibson, Carpenter 2001; Volk, Pearsall, Christian, & Becker 2017) and that interactions at work inform our temporal experiences through breaks, interruptions, and moments of gossip (Perlow 1999; Kim, Park, & Headrick, 2018; Puranik, Koopman & Vough, 2020). A few studies highlight more explicitly how time might relate to particular forms of interaction that facilitate connection—or isolation—at work, by emphasizing the link between specific temporal orientations, preferences, and experiences and the development of workplace relationships (Strobel, Tumasjan, Sporrle & Welp, 2013; Schinoff et al. 2020; DiBenigno 2020).

Although research focused on time shows how temporal orientations, preferences, and experiences inform how interaction unfolds in organizations, and thus, perhaps also experiences of isolation, these studies focus on temporal experiences in the workplace. However, as the work-family literature highlights, experiences of time outside of the workplace influence experiences of time at work, in ways that may affect interactions. Those with intense home demands may need, for instance, to leave work early to care for children (Perlow 1998, Moen et al. 2013, Reid 2015), potentially limiting interactions with others. In contrast, there is also evidence that workers may rely heavily on interactions and relationships with others to manage their home demands (Trefalt 2013, Freeney, Yseult, der Werff, & Collings, 2021). Recent research show how “scaffolding” - support for home responsibilities - facilitates involvement in work (Beckman and Mazmanian 2020). Various forms of scaffolds create different sorts of connections between these two spheres. While it is clear that family responsibilities and the way

they are managed creates different opportunities for involvement at work, it is unclear how this influences interactions and experiences of isolation.

In this paper, we unpack how experiences of family time demands generate experiences of isolation through a study of the workplace interactions of 72 STEM professionals across three organizations. We describe how workers, depending on their family demands and scaffolding arrangements, have different degrees of temporal sovereignty. Broadly, the term “temporal sovereignty” has been used across the social sciences to refer to a state in which individual’s enact control over their time, without detailed empirical or theoretical evolution (e.g., Nowotny 1994, Wajcman 2015). It refers to the degree of autonomy one has in allocating their time, recognizing that this discretion is shaped by one’s position in the social structure (Wajcman 2015). By temporal sovereignty, we refer to the extent to which people control family time demands. We show how temporal sovereignty guides how workers initiate, organize, and manage interactions in the workplace. These interactions accumulate into different experiences of support and feelings of inclusion. We find that workers with high temporal sovereignty are likely to encourage a broad range of interactions with colleagues, whereas workers with lower temporal sovereignty are likely to minimize interactions with colleagues and to focus them on work tasks. Over time, these interaction practices accumulate into different experiences of support, information, resources, and connections. In our settings, workers’ temporal sovereignty was curtailed by the demands of actively parenting young children, and low temporal sovereignty was experienced more often by mothers than by fathers. We show how the division of family responsibilities is central in shaping workplace relationships because these responsibilities curtail temporal sovereignty (for mothers and some fathers) and enable temporal sovereignty (for most fathers but not mothers).

We contribute to understanding isolation in the workplace by showing how time—its availability and flexibility—shapes how workplace interactions are interpreted and managed, thereby influencing the development of workplace relationships and access to resources that flow from them. The concept of temporal sovereignty emphasizes the need to consider family time demands (and related constraints) when examining experiences at work. We explicitly theorizing the relationship between time, interactions, and isolation, as well as the relationship between control, home time, and work time.

Isolation in the Workplace

While not often defined explicitly by scholars, employee isolation refers to an individual's experience of being alone in the workplace (e.g., O'Leary and Mortensen 2010, Bartel et al. 2011, Kahn 2019). In the management literature, isolation is closely related to concepts such as ostracism—a potential cause of isolation (Robinson, O'Reilly and Wang, 2013; Scott et al. 2013)—and loneliness—a potential outcome of isolation (Lam and Lau 2012, Gabriel et al. 2021, Wright and Silard 2021). Research has highlighted how isolation has negative effects for both individuals and organizations. At an individual level, employees who experience isolation have greater perceived job insecurity and health issues (Hershcovis et al. 2017). From an organizational perspective, employees who experience isolation are more likely to be worse performers (Golden et al. 2008, Ozcelik and Barsade 2018, Lam and Lau 2012), less engaged with and connected to their organization (Bartel, Wrzesniewski and Wiesenfeld 2010, Ng 2017, Gabriel et al. 2021), and less creative (Peng et al. 2017). Isolation can be contrasted with connectedness, which refers to individuals experiencing closeness to others (Dutton and Heaphy, 2003; Lee, Mazmanian and Perlow 2020).

The literature on workplace isolation highlights several broad categories of causes of this isolation: individual, relational, and work-related. In particular, a great deal of more psychologically-oriented research highlights how workplace isolation comes about because of an individual's particular characteristics, for instance, because of specific personality traits (e.g., disagreeableness) (Rudert et al. 2020; Rudert et al. 2021; Ren et al. 2021) or behaviors (e.g., acting unwelcoming) (Brown, Lawrence and Robinson 2005; Scott et al. 2013). In this framework, then, isolation comes about, often, because an individual's characteristics makes them someone that others do not want to connect with (Hales et al. 2016; Wu et al. 2011).

Moving beyond this focus on the individual, other work takes a more relational perspective, examining the fit or relationship between a given individual and others in the workplace. One line of research here highlights how a given worker might be surrounded by others who are uncivil, rude, competitive, or mean, and who may intentionally isolate the worker (Ng 2017, Hershcovis et al. 2017; Howard, Cogswell and Smith 2020). Another line of work notes that the experience of being surrounded by others who are difficult to connect to may reflect, largely, issues of organizational culture. In particular, an organizational culture where individuals do not regularly share and connect with another (Wright and Silard 2021; Kahn 2019)—for instance, because workers are regularly often out of the office (Rockmann and Pratt 2015)—will encourage disconnectedness. A final stream of research focusing on the more relational perspective to isolation is the rich stream of work that highlights how experiences of difference—because, for instance, one is an ethnic or racial minority, or a woman in a male-dominated workplace—are associated with isolation (Kanter 1977, Phillip, Rothbard and Dumas 2009), as majority members seek one another out and exclude those who are different (McPherson, Smith-Lovin and Cook 2001, Turco 2010). In this framework, then, isolation comes

about because a given individual is surrounded by others who are not the correct “fit,” either because they are uncivil, part of a “toxic” organizational culture, or demographically different.

A final stream of work highlights how isolation can come about because of the nature of the work an individual engages in. This is most commonly noted in research on remote work, which identifies how workers who work remotely often experience isolation (Wiesenfeld et al. 2001; Cooper and Kurland 2002; Golden et al. 2008; O’Leary and Mortensen 2010). More recent research has also noted that gig work—which often entails individuals working alone (e.g., at home, in a car) (Wood et al. 2019, Cameron 2021, Glavin, Bierman and Schieman 2021)—may enhance experiences of isolation as well. The design of tasks and roles also matters here. Low task interdependence may encourage isolation because, for instance, it makes it easier for workers to intentionally ostracize or isolate one another without concern of direct negative repercussions in day-to-day work (Robinson O’Reilly Wang 2013; Wu et al. 2015).

On first read, across these different realms of research—individual, relational, work-related—many of these studies can be interpreted as focusing on *spatial* elements of isolation. At a basic level, this is intuitive—isolation is often colloquially referenced regarding an individual being physically cutoff from others. In isolation research, this implicit focus on spatiality is most obvious in the prominent line of studies focused on remote work, that is, individuals who work in locations that are physically separate from coworkers. Here, for instance, scholars note the importance of considering “spatial distance” (Gajendran and Joshi 2012: 1258), “physical distance” (Rockmann and Pratt 2015: 151), and the “deatch[ment of] work from a place” (Kurland and Egan 1999: 510). However, the focus on spatiality emerges, more subtly, in other lines of isolation research. For instance, implicit in accounts of relational fit is the notion that if one was physically proximate to more similar others (e.g., in a workplace with more women)

then one might be less isolated (Kanter 1977, Ely 1994). It is clear, then, that spatiality matters when understanding workers' experiences of isolation, but it does raise the question if other ways of thinking—beyond spatiality—should also be considered.

A close reading of these studies suggests that, in addition to space, *time* should be considered. Current isolation research that emphasizes how isolation comes about because of a lack of shared space, implicitly, is often also highlighting how a lack of shared space may support a lack of shared time and, ultimately, feelings of isolation. Broader literature on time in organizations suggests the importance of studying time in relation to isolation. Scholars of time point out, time is important because all human experience unfolds in and across time, and therefore, studies of other constructs and concepts should consider temporality because it inevitably influences individuals' experiences of these other phenomena (George and Jones 2000; Ancona, Goodman, Lawrence and Tushman 2001). Despite this, as time scholars point out, much management research has not actively incorporated studies of time as a focal concept (Shipp and Cole 2015), and as far as we know, no current research on isolation has focused on this topic explicitly. Below, we engage with the literature on time in organizations to unpack how time may matter in relation to workplace isolation.

Time, Interaction, and Constraints

While management literature on time does not focus on isolation explicitly, it provides insights that may help us further unpack experiences of isolation. On a basic level, as mentioned above, a lack of time with others seems likely to lead to isolation. But the management literature on time adds nuance to this broad observation.

Through the literature on time in organizations, we begin to see a connection between time and interaction that suggests, perhaps, a connection between time and isolation. In one large, broad stream of research, scholars highlight how particular workplace temporal experiences (e.g., breaks) are facilitated by interactions in ways that may or may not support the performance of work activities. For instance, interruptions—events that unexpectedly punctuate moments in time—often come about from interaction with others, and can potentially support work task completion (Jett & George 2003; Leroy & Glomb 2018; Methot, Rosado-Solomon, Downes, & Gabriel, 2020). Whether or not a given interaction-based interruption is helpful depends on the content of the interaction in relation to the work task (Perlow, 1999; Sonnentag et al. 2018; Feldman & Greenway 2021). Breaks—that is, a pause in intense work time—may also involve interactions with others (e.g., eating lunch together) that can potentially help workers recharge, improving their wellbeing and work performance (Roy 1959; Kim, Park & Niu 2017; Chong et al. 2020). And interactions with others may facilitate temporal experiences at work (e.g., timelessness) that can potentially contribute to creativity (Mainemalis 2001; Elsbach & Hargadon 2006; Agrawal, Catalini, Goldfarb & Luo, 2018). Particular temporal experiences in the workplace are facilitated by interactions, and these times and interrelated interactions may contribute—or not—to the completion of work activities.

Another large, broad stream of research—mostly focused on teams’ experiences of time—highlights how individuals’ varied work-related temporal orientations and preferences may shape their interactions with one another in ways that affect collective work performance. Individuals who work together—typically on a team—often have different work-related temporal orientations and preferences, and this may lead to difficulties in facilitating the interactions necessary for the completion of tasks (e.g., a lack of coordination) (Waller, Conte, Gibson,

Carpenter 2001; Gevers, Rutte, & van Eerde 2006; Volk, Pearsall, Christian, & Becker 2017). It is through particular structures that shape employees' interactions (e.g., technologies that ease the share of data and therefore communication between individuals; leaders who coordinate individual action) that different work-related temporal orientations and preferences can be addressed and work can be performed effectively (Montoya-Weiss, Massey & Song 2001; Mohammed & Zadkarni 2011; Mohammed & Nadkarni 2014). Individuals' work-related temporal orientations and preferences—and their relationship to others' orientations and preferences—may allow for or limit the sorts of interactions required for the performance of tasks, although structures can facilitate improvements in day-to-day interactions and work performance across individuals.

A smaller stream of managerial research on time more explicitly highlights how time at work might relate to particular forms of interaction that may facilitate experiences of connection—or perhaps isolation—by emphasizing the link between particular work-related temporal orientations, preferences, and experiences, and the development of relationships. Employees who are focused on the future in their day-to-day work, for instance, may engage in more organizational citizenship behaviors that foster connections with others (Strobel, Tumasjan, Sporrle & Welpe, 2013). And individuals who prefer engaging in multitasking at work may become more central in their workplace's social network (Bertolotti, Mattarelli & Dukerich, 2019). It also takes a particular temporal rhythm and speed of interaction to facilitate workplace relationships (DiBenigno 2020; Schinoff, Ashforth, & Corley 2020). The implication here is that without such work-related temporal orientations, preferences, or experiences, individuals may perhaps be isolated from others at work.

In sum, then, from the management literature on time, we have a sense that individuals' time—both on terms of work-related temporal orientations and preferences (e.g., future-oriented) and the experience of particular moments of it (e.g., breaks, interruptions)—relate intimately to how interactions unfold in the workplace. In particular, work-related temporal orientations, preferences, and experiences are informed by and also inform how interaction unfolds in the workplace. Given that interactions—or a lack thereof—shape workers' experiences of isolation, there seems to be a relationship between time, interaction, and isolation, which the isolation literature has yet to examine.

It is important to recognize, however, that many of these studies highlighting the connection between time and interaction is implicitly focused on a particular aspect of individuals' experiences of time, namely, their experiences of time *at work*. These studies almost exclusively begin with the latent assumption that the individual has a work-related goal (e.g., deadline) that acts as a work-related temporal constraint, and it is in relation to meeting that temporal constraint that an interaction is experienced as helpful or not (Leroy, Schmidt & Madjar, 2020; Shipp and Richard 2020). For instance, research on interruptions generally highlights how a work-related interruption is helpful or harmful in relation to completing a given work demand (e.g., Parke Weinhardt Brodsky Tangirala & DeVoe, 2018). Similarly, research on team members' temporal orientations and preferences often focuses on the ability for the group to coordinate and fulfill work demands (e.g., Maruping, Venkatesh, Thatcher, & Patel, 2015). And the few select studies that draw a closer connection between time, interaction, and relationships focus on individuals' experiences of *work* time (e.g., the rhythm of this time). However, as we describe below, the literature on work-family highlights how experiences of time at work—including temporal constraints—are shaped by experiences of time in the home.

That is, time at work is not experienced in isolation from time at home, but rather, shapes and is shaped by work time.

The Intersection of Work and Non-Work Time

The work-family literature makes it clear that individuals' experiences of work time are shaped by and shape non-work time. A great deal of recent literature has highlighted, for instance, how work activities can take up time that has traditionally been reserved by family, and how this has become increasingly common due to the popularity of email, cell phones, and other technologies (Mazmanian, Orlikowski & Yates 2013, Derks et al. 2016). While work shapes home time, concerns about home time also shape work time. In response to these heavy work time demands, individuals actively manage work tasks to preserve home time (Perlow 1998). For instance, workers may block out time for family activities in their calendars (Moen et al. 2013).

While not explicitly examined in much of this literature, a close reading of work-family scholarship highlights how the management of work time, in response to home time, relates to the experience of workplace interactions. While not examined explicitly in this literature, there is a sense that this limiting of work time might, perhaps, result in the limitation of certain workplace interactions. For instance, if a worker leaves the office early regularly (Reid 2015) or focuses on work tasks at the exclusion of social time (Dumas and Perry Smith 2018), it seems likely that they will miss out on conversations, gossip, and other interactions with coworkers. At the same time, however, there is evidence that interactions themselves are necessary to reign in work demands and protect non-work time, because it is through interactions with others—and the relationships developed through interactions—that one can get support for controlling and limiting various work activities (e.g., securing a manager's support for taking maternity leave)

(Trefalt 2013, Freeney, der Werff, & Collings, 2021). On a basic level, it is also through interactions that work gets done, and so if workers are aiming to complete work efficiently, it does not make sense to cut out all interactions.

Recent research has suggested the importance of considering “scaffolding” when examining how individuals manage work and home demands. Beckman and Mazmanian (2020) describe how workers vary in the extent to which they are supported, enabled, and empowered by others at home (e.g., spouse, in-laws, nanny) in ways that allow for (or limit) individuals’ engagement at work. Workers with more extensive scaffolds—particularly scaffolds that are maintained and organized by someone else (e.g., a spouse who coordinates with the nanny)—tend to be able to focus on work activities with less day-to-day disruption from home responsibilities. Implicit here is the idea that scaffolds shape how work time is experienced in relation to home time, with various scaffolds lending themselves to different sorts of connections between these two spheres.

In sum, we have a sense from this literature that constraints (or lack thereof) from home time might shape individuals’ engagement in interactions. However, it is unclear if this will limit their engagements with others, promote their engagements with others, or something in between (e.g., encourage types of interactions, discourage others), and how this will ultimately inform workers’ experiences of isolation. In sum, taken together, the managerial literatures on time and work-family suggest that temporal demands at home will shape how individuals interact in the workplace, in a way that will likely inform their experiences of isolation. However, it remains unclear how home demands on time shape interactions, and in turn, isolation.

Research Setting and Methods

Setting

We examine interactions, time, and isolation by drawing on qualitative data from professionals in three STEM organizations: a university's STEM departments (MU), a STEM research consultancy (STEMO), and a pharmaceutical research company (PRU).¹ At MU, we studied assistant professors in the physical and natural sciences, who were focused on publishing papers and advising master's students, PhD students, and postdocs. At STEMO, we studied scientists and engineers who oversaw and advised on team-based technical projects for external clients. At PRU, we studied scientists who oversaw and advised on drug development projects with teams of coworkers. The organizations we studied were primarily comprised of men, with each organization having 70% or more men in professional positions. This is not unusually as many professional contexts remain male-dominated, including scientists (NCSES, 2021), engineers (Census 2021), consultants (Financial Review 2021), physicians (AAMC 2021), accountants (Catalyst 2020), lawyers (Census 2018).

Data Collection

The first author observed and interviewed a total of 72 scientists and engineers across the three settings (summarized in Table 1). The study began at MU, with an interest in examining how assistant professors, with and without children, organized their time given the demands of work and home. 15 assistant professors were shadowed and then interviewed each at the end of the day. Each of these professors was also asked to complete time diaries on two separate days. Follow-up interviews were conducted by the second author with four of these professors. To

¹ Names of organizations and all individuals are pseudonym. We have changed some small details (e.g., gender of participants' children) to preserve confidentiality.

expand the sample, interviews were conducted with four additional professors. This sample comprised over 50% of assistant professors in the relevant STEM departments at MU.

---Insert Table 1 here---

Through an inductive analysis of the MU professor data, we identified patterned differences in attention to time (e.g., concerns about having not enough time versus openness to how time was used) and the organization and management of interactions at work, that seemed related to parenting responsibilities. More interesting were the implications of this varying attention to time for how scientists managed their interactions within the workplace and experiences of isolation and connectedness. However, our sample of 19—although roughly half of the relevant population—was small. Therefore, we expanded the study by adding two additional sites.

The first site we added was PRU. Around the time we concluded that the sample of professors was too small, the first author had begun collecting data for a larger ethnographic project at PRU on the work of scientists. In addition to interviewing and shadowing the scientists, she spent extensive time during the 14-month period observing interactions in PRU's common spaces and attending social events, project meetings, and office-wide meetings. She also had hundreds of informal conversations with PRU workers on their thoughts about time and connectedness. PRU employed 23 scientists. All, except one who did not want to be interviewed, are included in this study.

After completing data collection at PRU, the first author began a larger data collection effort on the work of scientists and engineers at STEMO. She continued to collect data on experiences of time, interactions, and isolation and connectedness to increase our sample size as well as the generalizability of our findings. Over the course of 26 months, the first author

interviewed and shadowed employees, engaged in hundreds of informal conversations, and observed project meetings, office-wide meetings, and interactions in common spaces and social events. Through these means, she studied 31 scientists and engineers. This represented roughly 13% of senior STEM workers at STEM0, reflecting the fact that STEM0 was much larger than PRU and MU's relevant departments.

At all sites, the first author took extensive field notes as employees worked in their offices, visited colleagues, ate lunch, attended meetings, and conducted their daily business. These notes were typed up at the end of the day. Interviews were recorded when participants granted permission; otherwise, detailed notes were taken. All taped interviews were transcribed for analysis. Across the three organizations, initial participants were recruited via an organization-wide email. Additional participants were recruited as the first author met them at social events and project meetings. As the importance of gender and parental status emerged in our data analysis—described in detail below—we continued to sample in a way that allowed for variation on these characteristics until we reached theoretical saturation (Small 2009). For this reason, we oversampled on women (42% of our sample versus roughly 25% of these organizations' populations) to understand gender differences in experiences. We include additional details on our data collection in Appendix I.

Data Analysis

We analyzed our field notes and interview transcripts using inductive qualitative analysis techniques (Charmaz, 2006). As described above, our first round of data analysis focused on the MU data alone and surfaced the importance of time as well as feelings of isolation, loneliness and alienation—what we later realized was labelled as “isolation” based on extant literature.

While the first round of data analysis from MU guided our initial round of coding in PRU and STEMO data, we also searched for new, divergent, conflicting, and incompatible information. We coded for anything related to how workers thought about time, whether and how they managed time, and any time challenges they faced. We also coded anything related to whether or not workers experienced isolation, as well as anything that seemed to support isolation (e.g., office location, task dependences).

After this major round of data analysis, we noticed that workers seemed to engage in practices that shaped how workplace interactions affected their work time. We labelled these practices as “temporal interaction practices.” As we analyzed our data, we also engaged with various literatures on time including management, sociology, geography, anthropology, and science and technology studies. As we read this research, we were struck by the concept of “temporal sovereignty” that was remarked upon in several papers and books outside of the management literature. While we found that this term was defined in a multitude of ways across the social sciences, it was not particularly elaborated upon. In several key texts, however, it seemed broadly to be conceptualized as relating to how the control of time could affect broader experiences relating to work and home (Nowotny 1994, Wajcman 2014). Through iterating between these texts, management literature, and our data, we eventually came to conceptualize temporal sovereignty as the extent to which workers have an ability to control the timing of their home demands. We noticed how this concept contrasted with common extant concepts related to time from the time in organizations literature (e.g., temporal focus, Levasseur, Shipp, Fried, Rousseau, & Zimbardo, 2020) and the work-family literature, (e.g., temporal flexibility and schedule control, both of which typically refer to the extent individuals can control the timing of *work* demands, Briscoe 2007, Kelly and Moen 2007).

Through additional cycles of analysis, we slowly came to develop more systematic categorizations and descriptions of our three central concepts: temporal sovereignty, temporal interaction practices, and isolation. Regarding temporal sovereignty, as we coded our data, we identified two key experiences of temporal sovereignty, which we labeled “low” and “high.” As we closely analyzed our data, we found that temporal sovereignty reflected the form of scaffolding (Beckman and Mazmanian 2020) experienced by these workers, particular in relation to the performance of childcare which emerged as the most prominent and central home demand in our sample (see Table 2 in the findings). As summarized in Table 2, workers who did not need extensive scaffolding (e.g., because they had no children) or who had a partner who managed their scaffolding experienced greater temporal sovereignty. In contrast, workers who carried out their own scaffolding (sometimes through the help of others, e.g., a nanny) or who split scaffolding activities with a partner (e.g., trading off who brought the kids to school) tended to have more limited temporal sovereignty.

---Insert Table 2 here---

Similarly, we developed our conceptualization of the two sets of temporal interaction practices through our inductive data analysis. In particular, as we coded the data, we found that there were two sets of practices—“regulating” and “encouraging”—with each set being comprised of four interrelated practices (see Table 4 in the findings). We then went through our data again and examined each individual separately, studying their particular enactment of these four practices. We found that most individuals tended to consistently engage in either “regulating” or “encouraging” practices, classifying them as one or the other category. That is, we found that most tending to draw on one set or the other of practices, although of course individuals occasionally drew on the opposite set.

Finally, we developed our conceptualization of isolation by iterating between our data and the literature on isolation and related concepts such as loneliness (e.g., Russell, Peplau, and Cutrona 1980; Fairhurst and Snavely 1983, Hughes et al. 2004; Golden et al. 2008). We ended up focusing on the four dimensions listed in Table 5 in the findings. Similar to temporal sovereignty and temporal interaction practices, we went through our data again and examined each individual separately, studying their experiences of connectedness along these four dimensions. We found that most individuals tended to experience either isolation or connectedness along all four dimensions and classified them as one or the other category accordingly.

Through our sorting and classification of individuals' experiences regarding these three central concepts, we noticed that there were two general "paths" individuals experienced regarding temporal sovereignty, temporal interaction practices, and workplace isolation: low-regulating-isolation (N=22) and high-encouraging-connectedness (N=37). These two common patterns of experience are the focus of our paper and are described in detail in the findings section. The remaining 13 individuals experienced variations of this pattern—reflecting, for instance, accounts of gender and isolation describe by extant literature (e.g., Turco, 2010)—and we address these individuals' experiences in Appendix II. We also performed more targeted analyses, for instance, to examine if other factors (e.g., hobbies, eldercare) shaped temporal sovereignty, as well as potential alternative explanations (e.g., was it age driving our findings, was this just about time management skills). We detail these analyses and their results in Appendix II as well. Throughout our data analysis process, we wrote extensive memos and vignettes as we tried to understand the relationships between time and connectedness.

Findings

Below, we show how temporal sovereignty shaped the interpretations of workplace interactions, the practices used to manage them, and experiences of isolation. In the first section, we examine how temporal sovereignty – control over family demands – depends on both family demands and the scaffolding arrangements used to manage them. We then show how temporal sovereignty influences how people experience time at work. In the second section, we detail how these experiences of time at work influence how people understand and manage interaction at work. In the third section, we show how these interactions accumulate into different experiences of support and feelings of isolation (or not). Throughout the findings, we trace these theoretical relationships by describing the experiences of workers with lower versus higher temporal sovereignty along two major “paths.” Figure 1 contains a summary of these two sets of experiences.

---Insert Figure 1 here---

Temporal Sovereignty and Experiences of Work Time

Temporal sovereignty is a continuum along which workers have more or less control of family time demands. This control is a function of both the family demands one has (i.e. no children, young children, parents who need care, etc.) and the resources one develops to manage these demands (i.e. nanny, grandparents, nursing aide, etc.). We observed that different degrees of temporal sovereignty were associated with different experiences of time at work. Below, we describe how people with relatively low and high temporal sovereignty experienced time at work. Table 3 summarizes these findings and includes additional examples.

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Low Temporal Sovereignty and Limited Inflexible Work Time

Workers with less scaffolding support tended to have more limited temporal sovereignty, that is, a more limited ability to control the timing (i.e., precisely when and how much) of their home demands. Typically, children required these workers' attention between their wakeup time and the beginning of their formal childcare (e.g., school, daycare, nanny), as well as after this formal childcare ended. On a day-to-day basis, these demands were therefore relatively rigid and time-consuming. Shane (STEMO Scientist, Double Scaffolding) explained, "I bring my daughter to daycare [and] I get her in the afternoons." This meant he could not start work before 8am—the earliest time he could drop her off—and he always needed to finish by 4pm. Sarah (PRU Scientist, Modular Scaffolding) similarly relied on her nanny to watch her two young daughters during the workday. But once her nanny was off at 6pm, she took over her daughters' care. Workers' relative lack of control day-to-day over the timing of childcare was also commonly illustrated through the example of a sick child. As many of these workers described, when their child was sick, it often required them to stop work immediately to pick up their son or daughter. As Dawn (MU Scientist, Double Scaffold) noted, when one of her sons was sick, her husband and her would consult their schedules and whoever had less important meetings that day would watch the child: "Whoever has [the important meetings] goes in, and the other person stays at home and cancels appointments." For Dawn, this had led to several days of missed work in the past few months.

Reflecting a relative lack of control over the timing of their childcare responsibilities, these individuals experienced work time as limited and inflexible. Typically, the start and end of daycare, school, or nanny hours set their work schedule. Tyler (STEMO Scientist, Double

Scaffold), for instance, explained that his son's daycare schedule set his work hours. He arrived at work between 8am and 8:30am, but "I always leave at 5:30. Because of daycare pickup."

Similarly, Tina (MU Scientist, Double Scaffold) described, "My schedule is much more regimented than my colleagues without kids. There is less flexibility. I have to leave at the same time every day [to get my son]." After children were asleep, these workers might be able to put in another hour or two of work. Heather (PRU Scientist, Modular Scaffold), for instance, often checked and responded to emails from 8pm until 9pm after her two young children were in bed. Work time, however, remained relatively limited and inflexible to roughly 9-to-5 on weekdays because of these workers had childcare responsibilities.

For these individuals, work time was focused on getting work activities done, in the relatively limited and inflexible hours they had for work. April (STEMO Engineer, Double Scaffold) explained pointedly that during work hours, "I need to focus on work." She explained that sometimes, she would get a call from one of her kids' daycare saying one of her children was sick, and she would have to drop everything to go get the child. Because of this—and the fact that, even on routine days, she only got to work "after various drop offs" for her kids—uninterrupted moments of time at work were precious. Julie (MU Scientist, Double Scaffold) similarly explained regarding her work, "I need to focus." Work time, she explained, was for work, not for "people coming in and out of my office" with questions unrelated to the immediate task-at-hand. Work was to be prioritized.

Relatedly, for these individuals, work time was to be actively managed rather than passively experienced. As Stephanie (MU Scientist, Double Scaffold) explained, "You are the boss of your time... What do you care about, what do you put in your schedule, and what do you actually work on? These are choices that people make." Stephanie realized this through, among

other activities, actively scheduling her work hours. Similarly, Craig (STEMO Technology Specialist, Modular Scaffold), explained how he managed his work schedule while also caring for his two children. After noting how he planned to rearrange his schedule to take his kids on vacation, he explained, “*I* have to be careful about how I use my [work] time” (emphasis the authors). That is, Craig needed to be conscientious and active about how his work time was “used”; he could not let this time be passively experienced.

High Temporal Sovereignty and Flexible Work Time

Workers who did not need extensive scaffolding or who had a partner who provided extensive scaffolding tended to experience greater temporal sovereignty, that is, a greater ability to control family time demands. Richard’s (PRU Scientist, Wife provides Scaffold) wife watched their daughter fulltime. He explained that on many weekends, he spent very little time with his daughter—instead working or playing or watching sports—while she remained in his wife’s care. Roger (STEMO Technology Specialist, No Scaffold Needed) did not have any regular home demands beyond basic cooking and cleaning, which he performed in the evening or weekend. He also puttered in home renovation as a hobby. But, as he noted, “I’m not talking major work.” When these limited home activities took place was flexible.

Reflecting their relatively greater control over the timing of their childcare responsibilities, these individuals experienced work time as relatively flexible. That is, they experienced their work time as easily expandable into hours traditionally demarcated for “home” activities, and further, that the precise hours of work could shift as needed in response to work demands. Ryan (PRU Scientist, Wife provides Scaffold) often worked into the evenings or on the weekends, as he explained, “Nobody ever asks you to work an evening... But it just seems like the most interesting things transpire on a Friday. Like some set of results, ‘I just finished up this

set of experiments. Just passing them on.’ So you end up Saturday maybe doing some research at home.” His wife would watch their children. Rachel (MU Scientist, No Scaffold Needed) similarly noted, “I either start working at like 7am or 10... I probably work until 11 or midnight every night.” On the weekends, she worked “at least one full day.”

For these individuals, the focus of work time was varied. On the one hand, like those with low temporal sovereignty, they recognized that work time was for the completion of work activities. David (Scientist at MU, No Scaffold Needed), whose main work task as research, explained, “I try to spend at least 50 percent of my time on research.” At the same time, however, these individuals also viewed work time as a means by which they could more broadly enrich their lives through various enjoyable activities in the workplace, including engaging with coworkers. Ethan (STEMO Engineer, No Scaffold Needed) noted how he “really looked forward” to talking informally about new research ideas with co-workers. Similarly, Jason (PRU Scientist, Wife provides Scaffold) described how getting lunch with his co-workers was the highlight of his day. He loved the “fun” of joking around, gossiping, and talking shop with them. Of course, there were certain interactions they did not like such as unnecessary meetings: “Just having meetings, like meeting after meeting after meeting, I feel like it is such a waste of time” (Ethan). However, on the whole, these individuals viewed work time as a means by which they could more broadly enrich their lives through various enjoyable activities in the workplace, including engaging with coworkers.

While work time could be actively managed, there was also an acknowledgement that time could be made available to others. Ken (STEMO Engineer, No Scaffold Needed) talked about the importance of being open to others. Giving the example of eating in the cafeteria, he explained, “some days new people will come over [to my table]... and so we start having a

conversation like that.” He was open to interactions unfolding in this “natural” way. Similarly, Wendy (STEMO Technology Specialist, No Scaffold Needed) described how she remained open to collegial interaction by regularly answering more social phone calls or responding to more relaxed office visits from coworkers during the workday. While work time could be actively managed, there was also an importance of allowing work time being available for interactions.

Interaction Practices

As described above, temporal sovereignty shaped individuals’ experiences of work time. In this section, we show how work time experiences, in turn, informed workers’ interaction practices. Table 4 summarizes the two sets of interaction practices we observed and includes additional examples.

---Insert Table 4 around here---

Regulating

Viewing their work time as limited and inflexible—and therefore needing to be actively managed to focus on work—individuals who experienced relatively less temporal sovereignty engaged in *regulating* interactions. Workplace interactions can be difficult to predict and control in terms of their occurrence, frequency, and duration. As such they can unexpectedly derail plans to focus on work in the hours given. These practices were not, to be clear, aimed at eliminating interactions. However, as we describe below, these practices were aimed at making sure interactions were managed efficiently as possible. Specifically, individuals engaged in two subsets of practices. First, to preserve their work time, they tried to limit encounters with

colleagues that they viewed as peripheral to work including social conversations and non-urgent work-related matters, through two practices we label “avoiding” and “hiding.” Second, they tried to “optimize” the timing, length, and ordering of essential interactions so that they took less time, through two practices we label “organizing” and “focusing.”

These workers rarely initiated interactions with colleagues on non-work-related topics and tried to *avoid* colleagues’ attempts to spark such conversations. Shane (STEMO Scientist, Double Scaffold) explained that he did not invite colleagues to lunch:

“I don’t really have lunch with people that I regularly work with. I eat at my desk to be quick and save time. I wouldn’t ask someone ‘Oh, do you want to have lunch with me?’ I just try to eat much more quickly. So I’ll eat lunch at my desk in 15 minutes and keep working instead of taking like half an hour or something.”

Although workers like Shane rarely initiated social interactions, it was inevitable that at some point a colleague would knock on their doors, strike up a conversation in the hallway, or invite them to an office party. In such situations, workers tried to end the encounter by politely excusing themselves. At the end of work meetings, Susan’s (PRU Scientist, Modular Scaffold) colleagues would often discuss various matters not directly related to their research projects, such as newly published papers or gossip about competitors. Occasionally she would chat for a few minutes with them, but often she mentioned that she had work she needed to do, stood up, and left the room while others will still in the middle of a conversation. Time with colleagues—specifically time that appeared to be social or peripheral to the work—was viewed as unnecessary and eschewed to preserve time.

Many of these workers felt awkward flat-out refusing or frequently excusing themselves from time with colleagues. Further, even encounters that were quickly “nipped in the bud”

constituted an interruption to their working time. Therefore, when they needed to focus, these individuals worked in spaces where colleagues could not easily find them. We label this practice *hiding*. Tara (STEMO Engineer, Modular Scaffold) noted, “I’m always working from home.” She elaborated, “Strategy-wise, I tend to do most of my intensive work at home. When I am home is when I can really write something that is difficult. I can get a lot done.” No one interrupted her when she worked at her kitchen table. Avoiding interactions also required not eating, walking, or standing in public areas for prolonged times. Craig (STEMO Technology Specialist, Modular Scaffold) complained that if he ate lunch in the cafeteria, his coworkers would inevitably stop by and want to chat. Even when he sat in the far corner of the cafeteria, someone would come and talk to him. So, he usually bought food and then walked directly back to his office. He explained, half-joking and half-serious, “I know there is a mother’s room. We should have a [senior technical worker’s] room where we can go. For one person at a time, and a key card required to enter.” These workers, then, sought ways to avoid social interactions.

Workers tried to *organize* work-focused interactions in the order, length, and frequency that took up the least amount of time while also adequately addressing the task-at-hand. Susan (PRU Scientist, Modular Scaffold) made sure her main project had weekly meetings where she could ask questions of all her colleagues at once, rather than having to seek them all out individually. After establishing these meetings, however, she became concerned about their frequency. When meetings occurred too often, she realized that conversation often shifted to off-topic discussion, which she wanted to avoid: “If a meeting is just chatting, I usually [laugh] don’t go.” But when meetings occurred at biweekly or monthly intervals, the team did not coordinate enough and work slowed. She found that weekly meetings were the “sweet spot”: “With just weekly meetings, things are on track.” Shannon (STEMO Scientist, Modular Scaffold) learned

that when she had questions for particular colleagues, she needed to visit them in person because they never checked their email: “Some people don’t even respond to emails, but if I go and I find them, we can talk.” These in-person visits were necessitated because she needed information from colleagues quickly, and this was the fastest way to get it. As shown by contrasting these two examples, the most efficient way to organize interactions with coworkers depended on the nature of the work. What was common, however, was the attempt to arrange interactions so that they were short but adequately addressed the task-at-hand.

Despite workers’ efforts to pre-emptively avoid offhand conversations that threatened their time outside of the organization, such encounters inevitably occurred. In response, workers actively intervened to *focus* attention to the task-at-hand to preserve valuable time. One common tool used to redirect a conversation was to remind coworkers of how many minutes had passed or were left in a meeting. Amber (PRU Scientist, Modular Scaffold), for instance, emailed or printed and handed out an agenda for each project meeting she ran. Each topic was listed, with a corresponding number of minutes. When someone mentioned something that was off-topic—typically regarding a part of the project that Amber did not view as relevant to the current conversation—she thanked them, noted the time, and then read out the title of the next agenda item. By pointing out the time, she highlighted that there were only a few short minutes to address a particular work task and redirected attention to that work. These individuals also tried to focus interactions into smaller chunks of time by emailing coworkers instead of talking in person. In general, they noted that others were less likely to bring up off-topic conversations in emails, which tended to be more direct than in-person conversations. Dawn (MU Scientist, Double Scaffold) for instance relied on Doodle scheduling polls to setup meetings. Instead of having to go speak to each coworker individually—allowing for the possibility of casual

chatting—it was quicker for her to simply send out one focused email. As she noted more broadly: “I don’t want distractions [when working].” Email was one way in which she cut out such distractions.

Encouraging

Experiencing their work time as more flexible, and perhaps more available, individuals who experienced relatively greater temporal sovereignty engaged in *encouraging* practices, through which they engaged in interactions as they came up during working day. Specifically, individuals engaged in two subsets of practices. First, they crafted opportunities for encounters to occur and activities to coevolve through practices we label as “sparking” and “signaling.” Second, they accepted the “natural” ebb and flow of time passed with colleagues once interactions were underway, through two practices we label “shifting” and “meandering.” These four practices collectively allowed workers to coordinate their time with that of colleagues.

These workers *sparked* opportunities to spend time with colleagues by responding enthusiastically to colleagues’ casual conversation, office drop-bys, or hallway greetings, and initiating such activities themselves. Charles (PRU Scientist, Wife provides Scaffold) almost always talked with his colleagues immediately following formal project meetings. While “officially” the meeting had ended, he would casually ask his colleagues if they had recently read any interesting or thought-provoking academic papers. In turn, colleagues would ask him similar questions. These informal conversations usually ended when whoever had booked the conference room next arrived and asked the group to leave. Typically, this was 15 or 30 minutes after the end of Charles’s official meeting. Similarly, Marcus (Technology Specialist at PRU, Wife provides Scaffold) always greeted colleagues as he walked around his office’s hallways. On one

typical day, he engaged in hallway chitchat with four coworkers, and also stopped by colleagues' offices seven times to chat socially. When people were working from home for the day, Marcus would call them—without prompting—to see how they were doing: “I’ll actually call, you know, I’ll treat it like stopping by the office. I don’t hesitate to do it.” He initiated interactions with colleagues, and they passed time together.

To create opportunities for spending time with colleagues, these workers also often *signaled* to coworkers their openness to interaction and sought indications of colleagues' availability as well. There were several common ways workers signaled availability. One was to work with an open door. As Jessica (MU Scientist, No Scaffold Needed) described, “I have my door open most of the time.” She added, “I want people to come by. So I’m trying to keep my door open.” Jessica wanted to encourage interactions with colleagues: “Often it will be other professors popping by to say hello and see how things are going... It does not bother me. It’s welcome. I want my door open because I’d like more of that.” When asked if she felt interrupted, she explained, “Yeah. I mean I’m always doing something so I’m always interrupted. But if it’s a colleague, I will just drop whatever I’m doing. I want to be as open as I can to interactions right now. I would like to get more interactions than I’m getting I think, so I can form connections.” Notably, if Jessica was teaching, she would close the door the day assignments were due so that undergraduate students would not ask her too many questions. It was time with colleagues—and not just time with anyone—that she valued. Other workers signaled availability through electronic means. Each morning, Zachary (STEMO Engineer, No Scaffold Needed) signed on to his company’s messaging software and remained signed in until the end of his workday. A green light next to his name signaled his availability to others, and colleague-friends would call him on the software. If he missed their call—for instance, because he was in a meeting or talking to

someone else—he would return it as soon as he could. Similarly, he could tell if colleagues were available by the green light next to their individual names.

When interactions expanded in time, taking more minutes or hours than anticipated, workers *shifted* work or home activities to later in the same day, week, or month to make more time for colleagues in the present. Dustin (STEMO Engineer, No Scaffold Needed), for instance, planned to finish his data analysis and then go to the gym for a 6 pm workout. However, when packing up his bag, he began chatting with his coworker about a technology from a rival company, which had been subject to dispute in the press. Was this technology as good as the company claimed? Or were there unacknowledged limitations? They chatted for nearly an hour before the conversation wound down. Then grabbing his gym bag, Dustin locked his office door and headed out for a late evening workout. Dustin’s gym trip was pushed back to later in the evening, and his data analysis had been moved to the next day. In a similar example, Aaron (MU Scientist, No Scaffold Needed) planned to leave the office by 2pm one day to meet his wife. However, during the day he had three ad-hoc discussions with colleagues—ranging from 20 to 30 minutes—about exciting developments in his colleagues’ work and their research field at large. Aaron eagerly participated in these discussions, wanting to hear more about the work of other researchers. As a result, he ended up not leaving his office until 3pm, an hour after he was supposed to leave. His wife waited.

These workers allowed conversations to *meander* and dwell on various topics, enabling proper time to expand and be experienced in the present with colleagues. Tanya’s (STEMO Technology Specialist, No Scaffold Needed) colleague greeted her in her office one morning at 8:48 am. She asked him how his grandfather is doing—he was recently hospitalized. The coworker explained that his grandfather was “pissed” about being injured—as Tanya knew from

past conversations, Grandpa liked to be up and active—but on the mend. They then talked about where their other colleague was as she was not in her office yet. Tanya mentioned that this colleague went away for Easter. The original coworker then explained that he and his brothers were coordinating plans for their own Easter weekend. He detailed what cities both brothers lived in. Tanya already knew the general area they were from, but not the particular towns. The coworker then picked up a small, 365-day calendar on Tanya's desk, and read the daily joke from it. They both laugh, and agreed it is funny. The interaction lasted 10 minutes in total. In a similar example, at 12:30pm Scott (PRU Scientist, Wife provides Scaffold) was walking back to his desk from a work meeting with a colleague. However, on the way back, the two noticed March Madness on the lobby television, and stopped to watch it together. As they were watching, a third colleague joined, and Scott asked her about the soup she was eating for lunch. A fourth coworker joined and Scott gossips with him about invitations to a social work outing; should an employee who handed in her two-weeks' notice be invited? Then a colleague stops by and says there is going to be a foosball match—would Scott like to watch? He agrees, although he says he cannot stay the entire time because he has a meeting. He leaves the match at 12:56pm. A work-related discussion with a colleague had evolved into various casual conversations, that spanned nearly 30 minutes.

Workplace Isolation

As described above, temporal sovereignty shaped individuals' experiences of work time and, by extension, interaction practices. In this section, we show how interaction practices, in turn, informed individuals' experiences of workplace isolation. Table 5 summarizes the two experiences of isolation in the workplace that we observed and includes additional examples.

---Insert Table 5 around here---

Isolation

Workers who engaged in regulating practices tended to experience isolation in the workplace. Conversations with colleagues often focused on work-related matters and did not entail the exchange of anything particularly personal or sensitive. Edward (MU Scientist, Double Scaffold) explained that the colleague he talked with the most was a seminar co-organizer. While they usually quickly exchanged greetings when meeting—for instance, asking how one another’s weekend was—their conversations revolved around the seminar: “We just discuss administrative stuff.” Similarly, Shannon (STEMO Scientist, Modular Scaffold) occasionally spoke with one coworker in her unit about non-work matters, but otherwise her conversations with coworkers were work-focused. As she noted, “I’m mostly just attending meetings.” Her conversations, accordingly, were focused on project work rather than anything outside of work.

Correspondingly, these workers did not know personal or professional details about their colleagues and their colleagues did not know them well either. Tyler (STEMO Scientist, Double Scaffold) could not describe his coworkers’ current research projects or interests. Further, coworkers struggled to describe Tyler’s work and interests beyond the broad strokes of his research and teaching. Amanda (MU Scientist, Double Scaffold) noted, “I don’t know what my colleagues do, to be honest. I just saw Lindsey whose office is across the hall and she’s like, ‘Oh you cut your hair.’ Yeah, like a week and a half ago. We just don’t see each other. We only see each other in meetings.” Even though their offices were situated across the hall from one another, because Amanda tried to curtail her time with others, she did not see Lindsay for an

entire week. While she did not know about Lindsay's haircut, more broadly, she also did not know much about Lindsay's—or other colleagues'—personal lives and professional struggles.

These workers did not regularly exchange advice, help, information, or resources with colleagues besides what was required by formal work activities. Stephanie (MU Scientist, Double Scaffold) described “being really scared” about not making tenure. In fact, it was only in her fourth year as a professor that she realized that teaching and service were not really being weighed equally with research—despite this formally being the case in her department. Stephanie was surprised, concerned, and frustrated. By limiting time with coworkers, she also missed out on informal advice regarding tenure. Similarly, when Amber's (STEMO Engineer, Modular Scaffold) unit was hired for a new project, she was the third person to be contacted to fill a role on it, despite the fact that her skillset matched the work perfectly. Dustin (STEMO Engineer, No Scaffold Needed)—who had contracted in the project—had first asked two of his work-friends for help, before coming to her. Dustin explained that he had thought of his work-friends first, before realizing Amber might be a fit for the project.

Ultimately, these workers felt like outsiders, viewing colleagues as coworkers but not friends. Tara (STEMO Engineer, Modular Scaffold) explained, “There is no one at work that I feel close or connected to. I just have like no really warm experiences with anyone at work.” While she could easily list off coworkers she communicated on a daily basis with for work matters, these regular work-focused conversations and email messages had not evolved into any sense of closeness or belonging. Brent (STEMO Scientist, Double Scaffold) similarly explained that he had no work friends, although this had not always been the case. He explained that before his children, he had made several close friends at work. But after having his daughter and son, he had not formed any new connections. And as his coworker-friends left his unit to transfer or

quitting STEMO, he felt increasingly alone: “I don’t really have [work-]friends that I hang out with anymore.” He now worked with colleagues, not friends.

Connectedness

When workers engaged in encouraging practices, they mostly developed a sense of connectedness in the workplace. For one, they shared sensitive information, such as details about their personal lives and office politics with coworkers. Ethan (STEMO Engineer, No Scaffold Needed), for instance, griped to his coworker and office neighbor about how frustrating one of their senior colleagues could be. He was never available to help with work and came off as entirely absentee and unavailable. Ethan also gossiped, in hushed voices, with his colleagues about several specific coworkers who just tried to find large, well-funded “whale”-like projects, but then did nothing on them. Similarly, when Wendy (STEMO Technology Specialist, No Scaffold Needed) experienced difficulties in her personal life, she often shared them with colleagues. As she explained:

“I’ll talk through the stress I feel about some stuff day-to-day. Those conversations are not really formal, but it’s been nice to bounce concerns off each other... I have a really good working relationship with some of my colleagues, whom I consider a friend and not just a colleague. So, you know, I’m fortunate that way that we can talk about non-work-related stuff.”

She shared sensitive information with her coworkers, and they in turn shared it with her.

Relatedly, these workers came to have a detailed knowledge of colleagues’ professional and personal lives, and for others to know them personally and professionally as well. Wendy, for instance, learned about her colleagues’ various personal struggles such as uncooperative

teenagers, ill spouses, and house purchases. In turn, she shared with her friends when her sister had severe health difficulties. Rodney (STEMO Engineer, Wife provides Scaffold) also knew his coworkers very well. He described their various technical skillsets, career difficulties, and personal problems. He noted, “I’m always there to lend an ear if someone needs to talk.” When a new position became open in their unit, he thought immediately of his colleague Lakshmi, who was currently in the unit but had “grown out” of her current position. Because he knew her so well, he immediately knew she would love the new position, and recommended her to their boss.

These workers also regularly exchanged advice, help, information, and resources with colleagues, outside of formal work interactions. Mary (PRU Scientist, No Scaffold Needed) met with her biologist colleague Gary (PRU Scientist, Wife provides Scaffold) on Wednesdays at lunch for half an hour to an hour, despite little overlap in their project work. During these meetings, the two bounced ideas off each other, hoping to gain insight into one another’s approach to drug development. In doing so, they were exchanging advice and helping to advance one another’s independent project work forward. Similarly, when Charles (PRU Scientist, Wife provides Scaffold) needed more funding for a particular project, he asked coworker Richard (PRU Scientist, Wife provides Scaffold) if he had any extra funds in his own project budget. Richard said yes and transferred some of his project funding to Charles. The two were friendly with one another, and Richard explained that he viewed such a request as a friend asking for a favor, which he was happy to support.

These workers also felt like fully integrated members of their department, viewing colleagues as “good friends,” “mentors,” “best friends,” and “colleague friends.” As Ken (STEMO Engineer, No Scaffold Needed) noted, “I’ve become friends with my coworkers... I go to lunch with them each day.” And he saw them outside of work as well: “I hang out with some

of my colleagues on the weekends too.” When Ken was out of work from a month and could not see them, he explained he was “frustrated”: “I miss being able to interact with people as I normally would... Just going to have a conversation with them or walking down the hall to coffee.” Ken missed his work-friends. Todd (MU Scientist, No Scaffold Needed) similarly explained, “My colleagues are the people I want to hang out with. That’s why I like being at MU. They are my friends.” He went on to explain, “We choose to spend time together, because we are all here together.” Colleagues were friends, and as friends, Todd continued to try to spend time with them. His connectedness to them reinforced his orientation of proper time as focused on workplace interactions. The relationship between time and connectedness was reciprocal.

Notably, for some of these workers, their connection to colleagues was their central form of connectedness across their lives on a day-to-day basis. Todd, for instance, went on to explain, “My colleagues and I go to lunch almost every day. I view lunch as a big part of my family-friend-life time, because often at home my wife and I will just end up working.” Lunch time was when work was set aside for enjoyable connections with others. While he spent time with his wife after work, often their evening hours became devoted to work because they both had busy professional jobs. So, instead, social time was passed in the workplace. As Todd noted regarding his lunch time with coworkers: “That should be considered part of my spare time, not work time.” Similarly, Rachel (MU Scientist, No Scaffold Needed)—who lived alone and had a long-distance boyfriend—explained how her weekends were spent working: “I’ll work at least one full day on the weekend, and the other will be spent with a mix of work and household chores.” Even when talking with her boyfriend on Skype, they both worked: “We’ll both just talk while working on something that does not require our complete and total attention.” It was only with her work-friends that she regularly paused work time to connect deeply with others: “I probably

go out with [work-]friends like once a week, and we eat and drink wine, and blow off the next morning. But other than that, I'm pretty much here [in the office]. [laughs] Or working at home."

It is important to note that isolation outcomes—for workers who were high or low in temporal sovereignty—influenced workers' subsequent workplace temporal experiences and temporal interaction practices. Individuals who were more isolated—and who did not engage in enriching interactions or relationships at work—tended to continue to view encounters with others as unnecessary. James (MU Scientist, Double Scaffolding) explained, "I try not be unfriendly [with colleagues] [laugh]. But I definitely don't go to work to socialize. It is not something I want to do in my work day." He elaborated, "[Socializing] is like a break from work, and I would rather save up my break-from-work time for being home with my family."

Enmeshed in family life, James did not see a particular reason to regularly engage with his coworkers casually. Further, these individuals' rich relationships at home seemed to act as a counter, dissuading them from perhaps pursuing more extensive forms of scaffolding that could allow them to spend more time interacting with colleagues. Workers like April (STEMO Engineer, Double Scaffold), Amanda (MU Scientist, Double Scaffold), Jonathon (MU Scientist, Double Scaffold), Shannon (STEMO Scientist, Modular Scaffold) and Tara (STEMO Scientist, Modular Scaffold) all acknowledged that they *could* have paid for more extensive childcare and/or household help, but that they had decided to prioritize time with their children.

In contrast, individuals who experienced greater connectedness seemed to sustain the view that encounters with others were worthwhile and enjoyable. Larry (PRU Scientist, Wife provides Scaffold) explained that he was "having a ton of fun" socializing with his coworkers, and—armed with this understanding—noted that he wanted to continue engaging with them. As described above, many came to view work as a rich place for connecting with others, and this

seemed to reinforce and sustain their lack of engagement in scaffolding at home. Workers like Chad (STEMO Engineer, Wife provides Scaffold), Richard (PRU Scientist, Wife provides Scaffold), and Scott (PRU Scientist, Wife provides Scaffold) all spoke highly of times spent with work friends, and often spent time socializing with colleagues during the workday rather than leaving work early to, for instance, pick their child up from daycare, school, or afternoon activities.

Scaffolding and Gender

Consistent with a great deal of other literature (e.g., Blair-Loy, 2003; Stone, 2007; Daminger, 2019, 2020; Beckman and Mazmanian, 2020), we found that women tended to have less extensive scaffolding support than men (Table 6), reflecting gendered norms regarding responsibility and prioritization of childcare versus work. Of the 18 women with children in the home, none had a partner who served as a primary scaffold. All 18 women either served as a double or modular scaffold. In contrast, of the 28 men with children in the home, 20 (71%) had a partner who was a primary scaffold. As Amanda (MU Scientist, Double Scaffold) stated: “[In my department] many men here either don’t have kids, or they have a partner who takes a bigger role in taking care of the kids. So they do have more net time to work. For me, I go home, it’s only kids.” Similarly, Shannon (STEMO Scientist, Modular Scaffold) explained:

“Occasionally—we don’t do it very often but occasionally [my department] will go out for a drink or something. I’m like, ‘Well I can slam a drink and then go pick my kids up by 5:45 because they’re at daycare’... It’s usually like a group of the women that are walking back early [from the bar] because it’s like, ‘I got 20 things on my plate. I can’t stay all afternoon.’ Whereas more of the men are able to do that.”

The men were more likely to have partners caring for their children; they did not need to leave work at such a narrow set time. The result was that while women without children in the home as well as many fathers (who had more extensive scaffolding) tended to have relatively high temporal sovereignty, women with children had relatively lower temporal sovereignty

---Insert Table 6 around here---

Alternative Explanations

In Appendix III, we address several alternative explanations (e.g., regarding role seniority). As we describe in this appendix, we found that these alternatives did not explain our findings.

Discussion

In this paper, we identify how *temporal sovereignty*—that is, the extent to which workers control family time demands—informs how workers interact with coworkers day-to-day, and ultimately, whether they experience isolation or connectedness at work (Figure 2). As depicted in Figure 2, temporal sovereignty depends both on the family demands and the scaffolding chosen to support these demands. Temporal sovereignty comes to inform individuals’ experiences of work time, in ways that influence the day-to-day practices individuals engaged to shape how workplace interactions affected their work time. These practices generate experiences of isolation (or not). As depicted in Figure 2, for both groups, experiences of isolation at work reinforced individuals’ experiences of scaffolding and workplace temporality.

We find that workers with less extensive scaffolding experience more limited temporal sovereignty. These workers were more regularly engaged in managing family demands which limited their availability and flexibility of time for work and encouraged their focus on getting

work done by actively controlling and managing their work time. This orientation towards work time informed these workers' engagement in a variety of day-to-day practices that, ultimately, restricted their interactions with others in order to preserve work time, through limiting encounters that were peripheral to principal work tasks and "optimizing" the timing, length, and ordering of interactions so that they took less time. As a result is that these workers experienced, on the whole, relative isolation from their coworkers.

---Insert Figure 2 here---

In contrast, another group of workers either had no need for extensive scaffolding (because they did not have children) or had a partner who provided this extensive scaffolding either directly (e.g., stay at home partner) or indirectly (e.g., by coordinating all childcare). These individuals performed limited childcare day-to-day, leaving more flexible hours for work and interactions with coworkers (in addition to work-focused activities). With this temporal orientation, these individuals engaged in a series of practices that encouraged interactions with others through crafting opportunities for encounters and allowing for the "natural" ebb and flow of interactions once underway. These individuals experienced, on the whole, relative connectedness to coworkers.

For both groups, experiences of isolation at work reinforced individuals' experiences of workplace temporality. Workers who were isolated—and missing out on rich interactions and relationships with others—tended to underestimate the value of encounters with coworkers, reinforcing their views that such encounters should be eschewed. Their relatively greater connectedness at home seemed to reinforce their lack of reliance on extensive scaffolding. In contrast, workers who experienced connectedness—and engaged regularly in rich interactions and relationships with others—tended to view these encounters as worthwhile, reinforcing their

view that such encounters were important. Their relatively greater connectedness at work seemed to reinforce their reliance on extensive scaffolding (in cases where that was needed).

Contributions to Literature on Isolation in the Workplace

This research contributes to the literature on employee isolation in three ways. First, we draw attention to the importance of considering time in understanding how employees come to experience isolation at work. While time has been perhaps implicit in much work, extant research has not explicitly examined it. Much extant work tends to focus on aspects related to spatiality (e.g., Gajendran and Joshi 2012; Rockmann and Pratt 2015). While the spatial remains important (e.g., workers in this study who worked with a closed door seemed to experience more isolation), this study highlights and theorizes how time also plays a vital role in experiences of isolation. In particular, through the concept of temporal sovereignty, we highlight how experiences of *family demands* come to inform workplace isolation.

This focus on home time emphasizes the need for theories of isolation to look beyond the immediate workplaces for the causes of isolation. The importance of this has been, implicitly, highlighted in studies on how workers' demographic characteristics (e.g., race, gender) come to shape their experiences of isolation at work (Ely 1994; Dumas, Phillips and Rothbard 2013). It is not just the characteristics of individuals' formal work roles and design (Golden et al. 2008; O'Leary and Mortensen 2010) or organizations (Kahn 2019; Wright and Silard 2021) that inform experiences of isolation, but rather, also the roles they take on outside of work (e.g., parent who regularly cares for a child) that comes to inform isolation experiences. By emphasizing this point, this study expands theorizing on isolation to include not just the work sphere, but also the home sphere.

Relatedly, this study also highlights how there may, potentially, be a relationship between experiences of isolation versus connectedness at work, and experiences of isolation versus connectedness at home. As identified in this study, individuals who experience isolation at work may come to experience this isolation, in part, because of their close ties to members of the home sphere (e.g., children). In contrast, those who invest large amounts of their time in work connections may experience relative connectedness at work but less regular and recurring interactions and connections with those in the home sphere.

This study also emphasizes the importance of interactions in experiences of isolation. We examine how interactions may, over time, accumulate—or not—to various degrees of isolation. In doing so, we theorize particular patterns of interaction that may lead to isolation. This, importantly, opens up avenues for future researchers to explore, for instance, how other forms of interaction may allow for or limit isolation, as well as in what circumstances the interactional patterns we describe (i.e., regulating versus encouraging) may or may not result in isolation versus connectedness. This focus on interactions also highlights an interconnection between the individual (e.g., Rudert et al. 2021; Ren et al. 2021; Brown, Lawrence and Robinson 2005; Scott et al. 2013) and relational (e.g., Ng 2017, Herscovis et al. 2017; Howard, Cogswell and Smith 2020) accounts of isolation emphasized in extant literature. Individuals' engagement in particular interaction practices reflects the constraints they face (individual-level) but comes to shape their fit and relationship with their coworkers (relational-level). Note here that while we surface *temporal* interaction practices in this research, our work also opens up the possibility for examining other forms of enactment of interaction practices (e.g., spatial interaction practices). This provides another possible dimension to theorize regarding how interactions and related practices inform workers' experiences of isolation.

Contributions to Literature on Time in Organizations

This research contributes to the literature on time in organizations in four ways. First, this study highlights the importance of studying workers' experiences of *home* time in addition to work time. While extant research in this area has emphasized the importance of understanding various temporal orientations, preferences, and experiences in relation to work time, here we highlight how home time can intimately inform experiences of work, including work time. In doing so, we draw importance to paying attention to temporal experiences beyond the formal work setting when examining how individuals develop and sustain orientations, preferences, and related concepts in relation to work time. Including a focus on experiences of home time in the formation of work temporalities will provide a richer and more theoretically developed understanding of how time is experienced in the workplace.

Relatedly, we introduce the concept of temporal sovereignty, which captures how relative control of home time shapes work time. In doing so, we open up the possibility for studying how this particular aspect of home time comes to shape work temporalities. The concept of temporal sovereignty also emphasizes the importance of not just thinking about temporal constraints that come about from work (e.g., deadlines, expectations of responsiveness from coworkers)—the focus of much current research (e.g., Rogelberg, Leach, Warr, Burnfield, 2006; Sonnentag, Reinecke, Leonard, Mata, & Vorderer, 2018)—but also considering temporal constraints that come about from family (e.g., lack of flexibility and availability of work hours). In doing so, it enriches theory regarding how such temporal constraints come to shape workers' actions, identifying the importance of home constraints in addition to work constraints. A related contribution, here, is that through the concept of temporal sovereignty we come to better

conceptualize a connection between objective and subjective temporal experiences. While much extant research tends to highlight one or the other (Shipp & Cole 2015; Shipp and Jansen 2021), this study identifies how objective temporal conditions and constraints (e.g., a lack of flexibility in time) can come to inform subjective temporal experiences, orientations, and preferences (e.g., belief that time should focus on work tasks), and how temporal sovereignty in particular may facilitate the relationship between these subjective and objective experiences.

This study also makes important contributions to our understanding of the connection between time in organizations and control. In existing literature, there is a sense that the temporal experiences of workers are interconnected, and interdependencies and demands from one employee (e.g., interruptions, expectations of replies) might result in a lack of control over work time for another employee (Perlow 1999; Jett & George 2003; Mazmanian, Orlikowski and Yates, 2013). Here, we emphasize that a lack of control over work time might also come about because of constraints and demands arising from the home sphere, such as the performance of childcare. Considering workers' experiences of control (or lack thereof) of time in organizations, then, requires considering experiences of time in relation to home and family.

We also show how temporal experiences relate to workers' isolation. Therefore, this research adds to extant work that considers how temporal experiences inform individuals' wellbeing in the workplace (Kim, Park, Headrick, 2017). Moving beyond these extant studies, we highlight how time informs isolation through shaping workers' everyday interactions with coworkers. In doing so, we set the foundation for future theoretical work that might also examine how isolation and time are interconnected. A related contribution here is that—through our emphasis on interactions—we spotlight the importance of considering day-to-day temporal practices, in addition to the orientations, preferences, lenses, and related concepts that have been

emphasized in recent research on temporality. While temporal practices have of course been identified and theorized upon in previous literature, we highlight here the importance of continuing to consider these practices in conjunction with other temporal concepts, for instance, so that we can better understand workers' experiences of wellbeing in the workplace as in this study.

Contributions to Literature on Work-Family

This study contributes to the work-family literature in three ways. This study helps unpack the theoretical relationship between time, interactions, and isolation. This is, as far as we know, the first study to unpack this relationship directly. While extant work has hinted at this relationship, for instance, by describing how home constraints might shape how individuals manage their time—and implicitly, their interactions—in organizations (Perlow 1998, Moen et al. 2013; Beckman and Stanko 2020) as well as how time constraints might lead individuals to reach out to and connect with others (Major, Fletcher, Davis and Germano 2008, Trefalt 2013, Freeney, Yseult, der Werff, & Collings, 2021), there has been a lack of direct theoretical explication on the connection between all three of these concepts. In contrast, here, we highlight how exactly these concepts are connected: workers have more or less time because of variable home constraints and scaffolds, which informs their temporal interaction practices (i.e., how they interact with others day-to-day to shape how workplace interactions affected their work time), and ultimately, their experiences of isolation. Importantly here, we introduce the concept of temporal sovereignty as a unifying lens through which to understand these factors. Temporal sovereignty is shaped by home constraints, and in turn, informs the interaction practices and ultimately isolation individuals experience.

The concept of temporal sovereignty also furthers extant research because it explicitly theorizes about the relationship between control, home time, and work time. In particular, there are several existing concepts regarding the control of work time in the work-family literature. Schedule control and temporal flexibility, for instance, highlight how workers may have more or less control over their work because of particular organizational policies (Gonsalves 2020, Briscoe 2006, Kelly, Moen and Tranby 2010). The concept of boundary control does focus on how *managers*—that is, not workers themselves—divide their time between work and home (Perlow, 1998; Beckman and Stanko, 2015). In contrast, the concept of temporal sovereignty is the first concept—as far as we know—to theorize regarding how *workers*’ can control the timing of their family and home demands. Such a concept is important to enriching the work-family literature, because it broadens the focus of control from experiences within the organization (e.g., managers, policies) to experiences of the home. While of course much literature in work-family has implicitly noted that workers vary in the extent of their control over home demands (typically with a gendered lens, i.e., showing that women have less control over these demands than men who are often in positions of relative power and reflect gender norms (Hochschild 1989; Bowles and McGinn2008; Thomason 2021)) as well as how they manage these boundaries (Beckman and Stanko 2020), as far as we know, this important dimension of temporal control has not been explicitly theorized upon.

Finally, this study highlights the important concept of scaffolding. In doing so, this study does important work in disentangling gender, parental status, and support at home (i.e., scaffolding) in understanding workers’ varied experiences of work time and isolation. A great deal of literature has highlighted how women tend to perform more household and childcare labor than men (Bianchi et al. 2006; Stone, 2007; Daminger 2019, 2020), and a few studies

suggest that this isolation might shape how women versus men interact with others day-to-day (e.g., Reid 2015). However, as far as we know, this is the first study to emphasize that it is not gender alone that may result in these differences in temporal and interactional experiences—and ultimately, isolation versus connectedness, as described above—but rather, how experiences of parenting are gendered in such a way that women typically lack the extensive scaffolding that many men have access to (Beckman and Stanko 2020). In other words, this study illustrates how differences in scaffolding—which are often gendered—may lead to patterns of time and interactions that may disadvantage and ultimately isolate women, rather than gender alone that leads to these differences. Women who do not suffer from these differences in scaffolding (e.g., because they have no children) do not necessarily experience these same outcomes. Similarly, men who lack scaffolding may also experience time and interactions that ultimately isolate them. By disentangling gender, parental status, and scaffolding, we expand theorizing on gender, time and isolation to theorize in more detail the connection between these core concepts.

Boundary Conditions and Limitations

While this is a study of three organizational contexts, providing it with broader generalizability than many qualitative studies of one organization, there remain boundary conditions on these findings. The workers in this setting performed a particular type of work. While this work required collaboration with others, it did not require close side-by-side coordination required in some occupations, for instance, a manufacturing production line or medical teams. Such workers may have more daily interactions with coworkers and, subsequently, may be less likely to be isolated over time. Further, while the workers we studied could work remotely, there were still some organizational expectations requiring them to be at the office at least some of the time (e.g., for professors to teach and meet with PhD students). In contexts where colleagues work

entirely remotely, we suspect workers will, on the whole, be more isolated as their interactions with others may be more severely limited (all things being equal). Future research that examines temporal sovereignty and interaction practices in different settings could explore such contexts.

Second, the constraint placed by home time in our setting was childcare; other significant constraints were not raised (see Appendix II for details). How is temporal sovereignty, and related scaffolding, shaped by other sorts of home demands? For example, hobbies with regular and time-demanding activities might not be so easily “transferred” through scaffolding to a partner, and therefore the extent of scaffolding may not matter as extensively for shaping temporal sovereignty. Future work might look at how a broader range of home and life commitments shapes workers’ experiences, perhaps by studying different populations of worker (e.g., non-professional workers who cannot necessarily hire help for eldercare).

Third, while we observed many of these workers over the course of one to two years, it would be useful to examine their career trajectories over an even longer time horizon. What are the more long-term career implications—beyond isolation—of limited versus greater temporal sovereignty? Do workers who regularly engage in collegial interactions burn out because of the longer hours involved in their jobs? Do workers who regularly engage in regulating interactions earn lower salaries or receive fewer promotions than their colleagues? Future research might examine these long-term possibilities.

Practical Implications

This study has two important practical implications for organizational stakeholders. First, managers who want to improve the experiences of employees in their organization should think of ways to overcome isolation for employees with limited temporal sovereignty. As these

workers may minimize long, social interactions with no clear connection to work-related outcomes, one possibility would be the implementation of formal mentoring programs that would allow time constrained workers to meet colleagues without having to necessarily engage in time-consuming or ad-hoc interactions which could be disruptive to fulfilling both home and work duties in a timely manner. Second, this study has important implications for organizations and the return to work in the midst of the COVID-19 pandemic. While much current attention in popular press has focused on space, and how individuals working at home may be isolated (Browning 2021, Riegel 2021, Petersen and Warzel 2021), this study highlights that even as individuals return to common physical worksites there are root issues—related to temporal sovereignty—that may also generate isolation. As managers reimagine organizations following the pandemic, attention should not be only to the role of shared physical space in regards to employee isolation, but also to workers’ temporal sovereignty.

Conclusion

Employee isolation in the workplace is widely documented to be detrimental for both employees as well as organizations, although the relationship between time and isolation—while theoretically important—has yet to be directly examined. We draw on data from 72 STEM professionals across three workplaces to study the connection between home time and isolation. We identify how *temporal sovereignty*—that is, the extent to which individuals can control the timing of their home demands—informs how workers interact with coworkers day-to-day, and ultimately, whether they experience isolation or connectedness at work. We also show how workers experience either greater or more limited temporal sovereignty depending upon the extent to which they are supported by extensive scaffolding at home. Through highlighting the

concept of temporal sovereignty, we contribute to the literatures on isolation, time in organizations, and work-family.

Table 1. Summary of Research Settings and Data Collection Methods

	Major University (MU)	Pharmaceutical Research Unit (PRU)	STEM Organization (STEMO)
Organization	STEM departments of research university	Division of pharmaceutical company	STEM research consultancy
Workers Studied	Assistant Professors (19)	Scientists (22)	Scientists, Engineers, and Technology Specialists (31)
% of Relevant Population Sampled	56%	96%	13%
% Female in Relevant Population	25%	20%	30%
% Female in Relevant Population Sampled	58%	36%	36%
Observation of:			
Individual Daily Work Routines	Extensive	Extensive	Extensive
Interactions in Common Space	Limited	Extensive	Intermediate
Social Events	Limited	Extensive	Intermediate
Work Group Meetings	Limited	Extensive	Extensive
Informal Conversations	Limited	Extensive	Extensive
Interviews	All participants	All participants	All participants
Time Diaries	yes	no	no

Table 2. Scaffolding and Experiences of Temporal Sovereignty

Low Temporal Sovereignty	High Temporal Sovereignty
Modular Scaffold (N=10): Worker supports themselves and partner through own activities (e.g., picking up and dropping off child at school) and organizing others to help (e.g., hiring and managing a nanny).	No Scaffold Needed (N=26): Worker does not need support because of relatively little home and childcare demands.
Double Scaffold (N=16): Worker splits with partner support activities (e.g., who picks up child) and/or organizing others' support activities (e.g., who coordinates with nanny).	Partner is Scaffold (N=20): Partner supports worker by being a stay at home spouse, or working full or part-time and organizing all childcare and housecare in conjunction with outside help (e.g., nanny, in-laws).

Note: Forms of scaffolding are from Beckman and Mazmanian (2020).

Table 3. Temporal Sovereignty and Experiences of Work Time

Low Temporal Sovereignty	High Temporal Sovereignty
<p>Regular childcare responsibilities because of relative lack of scaffolding.</p> <p>Example 1: While Susan (PRU Scientist, Modular Scaffold) relied on before and after school childcare to help care for her daughter, she was the one—not her husband—to regularly drop and pick her son off from this care. If her daughter was sick, she would be the one to take him to the doctor and stay at home and care for him.</p> <p>Example 1: Stacy (MU Scientist, Double Scaffold) had two children, a younger child in daycare and an elementary aged child in school and an after-school program. Her husband and her split who was picking up and dropping off each child, “We’re just each doing one kid.” She, as well as her husband, were regularly engaged in such childcare responsibilities.</p>	<p>Limited childcare responsibilities as scaffolding not needed or carried out by another (e.g., spouse).</p> <p>Example 1: After having their two children, Greg’s (PRU Scientist, Wife is Scaffold) had moved to a part-time, less demanding job so that she could spend more time caring for their children. While he spent time with his children in the evenings and weekends, he was regularly involved, for instance, in taking them to after school activities, doctor appointments, or caring for them when they were sick.</p> <p>Example 2: Jessica (MU Scientist, No Scaffold Needed) had no children and was single. While she played soccer for fun one or two evenings a week, she otherwise had no strong external commitments. As she explained, “There’s no sort of time that somebody else is expecting anything of me at home which is different from how it is when you have sort of a family type feel.”</p>
Experience of work time: Availability and flexibility	
<p>Limited time available for work and limited flexibility in hours for work because of family demands.</p> <p>Example 1: Cynthia (PRU Scientist, Double Scaffold) explained that she always came to work early (“by quarter to 8am”) so that she could leave early (“I want to leave at the absolute latest by 4:30pm. And I try to leave at 4 or even 3:30pm often”) to be at home to care for her two kids by dinnertime. As she noted, even though she was a “workaholic” who “loves working,” she limited workhours because of her kids: “I do have kids though.” This was in contrast to before she had kids, when “I would get</p>	<p>Hours available and flexible for work.</p> <p>Example 1: Gary (PRU Scientist, Wife is Scaffold) worked flexible hours. For instance, he worked at the office late into the evening on some days, while other days he left closer to 5pm. He also described how if he engaged in ad-hoc social interactions during the day (i.e., as he described, “working on and off”) he could make up these hours at home in the evening: “I’ll read some work-related things [at home.]” He sometimes worked on the weekends as well. His wife watched their two children.</p>

<p>home and get right back on the computer [after work]” and she would work all weekend.</p> <p>Example 2: Brent (STEMO Scientist, Double Scaffold) detailed how he carefully scheduled his time so that he could leave early enough to care for his children given that his wife regularly worked an evening shift. As he noted, “My schedule is pretty much fixed.” When it did vary, the vast majority of the time (“99 percent”) it was because he needed to tend to his kids (e.g., one was sick). But he rarely allowed work to flow into the time when he regularly cared for his children.</p>	<p>Example 2: Natasha (STEMO Engineer, No Scaffold Needed) explained that she worked “flexible” hours. Some days she came into the office close to 8am, other days she arrived closer to 10am. She also sometimes worked in the evening if her work took her longer to complete than she had anticipated. As she noted, “I adjust my schedule.” While occasionally she needed to leave work early to care for home needs (e.g., taking her sick dog to the vet) this was a relatively rare occurrence.</p>
<p>Experience of work time: Focus and agency</p>	
<p>Aim of work time is to get work done by actively controlling and managing one’s work time</p> <p>Example 1: Edward (MU Scientist, Double Scaffold) spoke repeatedly about how he actively “organized” his work time “into a strict schedule” to get work tasks because “with my kids, I cannot work as much as I used to [before having kids.]” Time was not to be passively experienced, but actively managed.</p> <p>Example 2: Tara (STEMO Engineer, Modular Scaffold) explained that she was “contentious” with her work time, actively controlling and managing it (e.g., by using a “work to-do list”) so that she could “have the productivity that people are looking for.” This need to actively control her time was, she noted, because of her childcare commitments (“I have things going on [at home.]”)</p>	<p>Work time can allow for in-the-moment, enjoyable activities with others (in addition to work), which entails being open to one’s time being acted upon by others (in addition to managing and controlling one’s own time)</p> <p>Example 1: Aaron (MU Scientist, No Scaffold Needed) explained that he finished his work activities “flexibly,” with shifting priorities. While some things (e.g., departmental meetings) were “very firmly scheduled,” he performed most other activities in “sprees.” This allowed him the flexibility, he explained, to respond to encounters spontaneously initiated by coworkers.</p> <p>Example 2: Chad (STEMO Engineer, Wife is Scaffold) explained how he was open to engaging in “more social” activities during the workday, which he found fun. For instance, when his coworker asked if he wanted to play football with him one day during lunch, he eagerly responded yes, as he loved the sport and had grown up playing it. He did not describe needing to actively take charge of or control his time.</p>

Table 4. Interaction Practices

Regulating: Limiting interactions to preserve work time	Encouraging: Enabling interactions as part of work time
<p>Avoiding: Turning down colleagues’ invitations to spend time together, and not inviting others to spend time with oneself.</p> <p>Example 1: Sarah (PRU Scientist, Modular Scaffold) had—besides one evening “women’s night” hosted by PRU and held a block from the office—not accepted any social invitations from her colleagues. She had also not invited anyone to do anything social after hours (e.g., getting drinks at the local bar or going to a weekend event—like her other coworkers did). And during the workday, she often worked from one of the small conference rooms at PRU so that others would not interrupt her as she worked.</p> <p>Example 2: After project meetings, four of Amber’s (STEMO Engineer, Modular Scaffold) colleagues congregated in the hallway and chatted about their project. However, Amber walked past them, quickly escaping back to her office. While such informal gatherings were common after project meetings, she never initiated them and rarely joined others who were already talking.</p>	<p>Sparkling: Enthusiastically responding to or initiating spending time with others.</p> <p>Example 1: Mary (PRU Scientist, No Scaffold Needed), immersed in her work, is interrupted when her colleague greets her. She immediately looks up from her laptop and asks about the colleague’s biggest project, which Mary is not working on but is interested in learning more about. She eagerly asks four follow-up questions. The two talk for 11 minutes, before Mary needs to leave for a meeting. Mary explains, “I like interacting with people, like talking to [coworker]. It was social, but I also got a lot of information that could help with my future work. I hate email.” She loved passing time with colleagues, and also spent time with them outside of work hours (e.g., going to a baseball game).</p> <p>Example 2: Wendy (STEMO Technology Specialist, No Scaffold Needed) and her coworker started chatting casually after Wendy had finished a meeting. A third colleague then stopped by and the three started talking about how much the two colleagues could charge for some project work they were doing—Wendy offered some advice based on her own experience. As Wendy explained about her colleagues: “We don’t work on the same projects, but we will chat throughout the day.” She added, “It will just be like, ‘Oh by the way, guess what happened last night.’”</p>

<p>Hiding: Working in locations where coworkers are less likely to be present.</p> <p>Example 1: Edward (MU Scientist, Double Scaffold) often worked at home or in a coffee shop to get away from coworkers: “I hate having someone knock on my door when I’m trying to focus... People are always coming to ask me questions. That is why I like going to the coffee shop [laugh].” He noted, “Going to the coffee shop is a strategy.” He explained with exuberance how wonderful Dropbox was, because it more easily allowed him to work at home instead of only at the office.</p> <p>Example 2: April (STEMO Engineer, Double Scaffold) worked from home two days a week, where she was better able to focus on work without “distractions” like coworkers. When she was working in her office, she tended to keep her door closed and rely on email and phone calls: “If I don’t get an answer through email, I will call.” She tried not to leave her office.</p>	<p>Signaling: Indicating availability for passing time with colleagues.</p> <p>Example 1: Justin (MU Scientist, No Scaffold Needed) worked with his door open almost the entire workday. Unscheduled, several coworkers stopped by and entered his office, initiating a conversation with him.</p> <p>Example 2: Natasha (STEMO Engineer, No Scaffold Needed) explained that her coworker was a “personal friend” with whom she had regular “social” conversations. He was away for a week on vacation. Knowing that he would likely stop by to chat about his vacation—he had taken his girlfriend to meet his family for the first time—she left her office door open while she worked. While she shut her door for one 30-minute phone meeting, she opened it as soon as the meeting ended. The coworker stopped by that afternoon, walking in without knocking on the open door. Her open door signaled her availability to chat.</p>
<p>Organizing: Arranging work-focused activities with colleagues in the order, length, and frequency that is most time efficient.</p> <p>Example 1: Shane liked to keep his early morning available for focused work, explaining that “I don’t schedule a meeting [that early.]” While he often tightly (i.e., back-to-back) scheduled meetings with coworkers on the same projects as himself, he also limited meetings with those in his department he had less work overlap with, noting with regards to one colleague in particular who worked in a separate area: “I have no regular meetings with [colleague]... I really have no connection with her at all.”</p>	<p>Shifting: Delaying other activities to make time for enjoyable interactions with colleagues.</p> <p>Example 1: Ethan (STEMO Engineer, No Scaffold Needed) described that he took a break with three of his colleagues each afternoon. There was no set time for these casual encounters. Instead, “when somebody is completely dead” that person would stand up, leave their office, and go get the others. Ethan explained, “I do try to walk around and talk to other people every time I’m doing a work task and I’m like ugh, I don’t want to do this.” Walking down the hall signaled his—and others’—availability.</p>

<p>Example 2: To protect quiet periods of time for research, Julie (MU Scientist, Double Scaffold) structured her meetings with her three lab members. She scheduled a weekly meeting with each worker: “If they have interesting data, or they need to discuss something, then I’ll have like a half an hour or an hour meeting with them, and I usually do that with each of them once a week.” She also had a two-and-a-half group lab meeting each week. Time was allocated to and focused on activities with subordinates in a structured way, rather than allowing her lab members to stop by her office and chat on a whim.</p>	<p>Example 2: Throughout her workday, Rachel (MU Scientist, No Scaffold Needed) stopped her work three times to chat with colleagues. In one typical example, her colleague stopped by her office to discuss lunch plans for Thursday. As soon as her colleague arrived, Rachel stopped her work tasks, and only started them back up again when the colleague left. Rachel had also decided earlier that day to go to a party at the faculty club that evening, which she had decided to attend instead of attending to some grading.</p>
<p>Focusing: Directing colleagues’ attention to the task-at-hand to preserve time.</p> <p>Example 1: Heather (PRU Scientist, Modular Scaffold) had a long list of tasks that she wanted to complete within the two-and-a-half hours before she left work for the day. She sat down at her desk, and worked solely on the listed tasks. As she worked, three coworkers stop by to ask her questions related to her task list. For each colleague, she provided the relevant information—typically in a curt sentence or two—and then returned to typing on her laptop, rarely looking up. She did not ask her coworkers how they were, tell a joke, or otherwise engage in informal conversation. Her return to typing signaled that the conversation was done, and the coworkers all immediately left.</p> <p>Example 2: Jonathon (MU Scientist, Double Scaffold) spoke of the importance of being “extremely disciplined and extremely focused” to improve one’s “research output.” During meetings with his students—as well as colleagues—when conversation veered off topic, he would gently remind the interlocuter of the focus of the conversation (e.g., by mentioning they needed to finish X research task). One Wednesday, when one meeting</p>	<p>Meandering: Allowing conversations with colleagues to move across and dwell on various topics, therefore expanding in time.</p> <p>Example 1: Immediately after project meetings, Adam (PRU Scientist, Wife is Scaffold) and three of his colleagues regularly wandered into the office kitchen. There, they often eagerly reviewed the meeting that had just unfolded while sipping on coffee: Did the next steps they agreed upon really make sense? Did this work relate to a recently published paper? Did any of them need help with their part of the project? These conversations sometimes lasted five minutes, and other times lasted half an hour, depending on how much there was to discuss following a given meeting.</p> <p>Example 2: Aaron’s (MU Scientist, No Scaffold Needed) colleague stopped by his office, and the two discussed yesterday’s research seminar. After chatting about the seminar’s quality, as well as who from their department attended, the two then drifted to discussing a form that the colleague had sent Aaron to fill out, which Aaron said he would respond to and return. Then, the two shifted back to the seminar, discussing the seminar’s history, including the professor who the seminar was named after (who was long since deceased). The colleague</p>

was running too long—and had gone off topic—Jonathon simply said, “I have to go, we can follow up on Friday.”

noted there was a photo of the professor in the hall. The colleague eventually left Aaron’s office, but Aaron wandered over to his office less than an hour later to chat about a research question.

Table 5. Workplace Isolation

Isolation	Connectedness
<p>Trust: Sensitivity of information exchanged</p> <p>“The facts,” with generic banter.</p> <p>Example 1: Throughout the day Susan (PRU Scientist, Modular Scaffold) talked to colleagues about their project team’s next steps. The most social her interactions became were when he asked “Hi, how are you?” before initiating work-related conversations with coworkers. Two colleagues explained that they viewed Susan as quite abrupt, and explained that even though they had worked together for over a year on a handful of different projects, they had not grown close.</p> <p>Example 2: Tyler (STEMO Scientist, Modular Scaffold) explained that he talked to his colleagues about “work-related things.” He added, “Sometimes family-related things come up, but these are not the people I would think of opening up to and discussing family matters or family concerns with.” He did not see himself as close to his coworkers, and therefore did not see any reason to share details regarding his personal life.</p>	<p>Detailed sharing of personal information and office politics.</p> <p>Example 1: Jason (PRU Scientist, Wife is Scaffold) whispered to Larry (PRU Scientist, Wife is Scaffold) that he heard their coworker quit over email, and he could not believe someone would do that—it was unprofessional. Larry agreed with a nod, having now learned more about their coworker’s sudden departure. On other days, the two told each other about how “stupid” and “annoying” a particular client was, complaining together about the difficulties of managing this customer. Jason and Larry regularly discussed such sensitive matters together.</p> <p>Example 2: Gerald (STEMO Scientist, No Scaffold Needed) told his colleague about the details of his messy divorce: “I went through a divorce. I told him about the negotiations and discussion with the lawyers as they were happening.” Over several months, he updated his friend on how difficult the situation was for him, particularly regarding custody over his son. It was a protracted “battle,” but Gerald was glad to have a friend to confide in.</p>
<p>Knowledge: How well colleagues are known and one is known to colleagues</p> <p>Do not know details of colleagues’ professional or personal lives, and colleagues do not know details of one’s professional or personal lives.</p> <p>Example 1: Angela (MU Scientist, Double Scaffold)—who was in the same department as Justin (MU Scientist, No Scaffold Needed)—did not know whether her colleagues were as worried</p>	<p>Detailed knowledge of colleagues’ professional and personal lives, and colleagues know one both professionally and personally.</p> <p>Example 1: Justin (MU Scientist, No Scaffold Needed) went out for lunch one or twice each with a particular colleague-friend. During these lunches, they discussed their fears and</p>

<p>as she was about making tenure. Although she occasionally heard them mention feeling stressed, she wondered, “Is that really what they are saying behind closed doors?” She did not know, because she did not join them in their offices or invite them to her own office for more casual conversation. Similarly, her colleagues—including Justin—noted that they did not know much about Angela.</p> <p>Example 2: Heather (PRU Scientist, Modular Scaffold) was surprised to hear in a meeting that Jeremy had never received his PhD, although they had worked together for three years. She let out a small gasp when she learned; everyone else in his position had a PhD, and she had assumed he had one too. In response to her surprise, Jeremy smiled sheepishly.</p>	<p>hopes about tenure, as well as their strategies for getting tenure and interacting with their department chair. They would also talk about their personal lives occasionally, with Justin chatting about his wife’s job or his after-work hobbies.</p> <p>Example 2: Scott (PRU Scientist, Wife is Scaffold) described the educational background and career history of each of his coworkers, noting where each had completed their PhD, and if applicable, their postdoctoral training. He noted—with a laugh—that Jeremy (PRU Scientist, Wife is Scaffold) had in fact never received a PhD, which was rare for people in their field. This demonstrated Jeremy’s exceptional skills, Scott noted.</p>
<p>Exchange: Advice, help, information, and resources given and received with colleagues outside of formal work activities</p>	
<p>Do not regularly exchange advice, help, information, and resources with colleagues besides on formal collaborative work activities</p> <p>Example 1: As she attempted to get tenure, Dawn (MU Scientist, Double Scaffold) did not get much help or advice from colleagues: “I could use role models just to help a bit. It’s really difficult... It would be nice to have an informal support system.” She felt that she did not have close relationships with coworkers that she could rely on for help and advice as she tried to navigate the path to tenure.</p> <p>Example 2: Sarah (PRU Scientist, Modular Scaffold) was viewed as highly qualified by her peers, including Jason (PRU Scientist, Wife is Scaffold) and Adam (PRU Scientist, Wife is Scaffold) who noted that Sarah was very sharp and intelligent. However, when spots for promotion opened up in her</p>	<p>Regularly exchange advice, help, information, and resources with colleagues outside of formal collaborative work activities</p> <p>Example 1: Jessica (MU Scientist, No Scaffold Needed) explained that she had colleagues she would ask for help as she tried to navigate her way to tenure. For instance, she sometimes asked more senior coworkers if it was appropriate to miss particular meetings: “Hey, what’s the culture on this? Can I miss this meeting or not?” These questions, she noted, were not formal and work-focused: “I ask them questions that I would consider less professional.”</p> <p>Example 2: Anthony (PRU Scientist, Wife is Scaffold) was competing against a colleague for a promotion. Barry—who was senior in Anthony’s department and helping select who filled the role—strongly recommended Anthony over the competing candidate. Anthony received the job a short time later, and he thanked Barry for his help and support.</p>

<p>department, no one strongly advocated for her. She was not seriously considered for the promotion.</p>	
<p>Closeness: Sense of closeness with others</p>	
<p>View many colleagues as coworkers but not friends.</p> <p>Example 1: Craig (STEMO Technology Specialist, Modular Scaffold) had no friends in his department, nor did he socialize with any coworkers—either at or outside of work. His colleague Roger (STEMO Technology Specialist, No Scaffold Needed) explained that even though he had worked with Craig for over two years on a handful of projects, they had not grown close.</p> <p>Example 2: When asked if he had any friends at work, Jonathon (MU Scientist, Double Scaffold) responded no. While he noted there were a few people he was polite and friendly with in his department, he had never met up with anyone outside of work. And even eating lunch with coworkers happened rarely: “I almost always work through lunch. I very rarely go out with my colleagues for lunch. that’s a rare treat.” Coworkers were colleagues, but not personal friends.</p>	<p>View many colleagues as close personal friends.</p> <p>Example 1: Tanya (STEMO Technology Specialist, No Scaffold Needed) explained, “I have a close group of friends in my unit. I try to maintain my friendships and relationships with them.” These close friendships, which had begun years before, she now tried to nurture. For instance, when she saw news articles or even recipes she thought her work-friends would like, she would email them to her coworkers or call them to chat about what she had found.</p> <p>Example 2: David (MU X, No Scaffold Needed) explained that he had several “friends” at MU, including some in his department. He noted, “I go out with colleagues.” He spent time with them socially, both at work (e.g., going out for lunch) as well as after work (e.g., going to a local bar).</p>

Table 6. Scaffolding, Parental Status, and Gender

	Women	Men
No Children in Home		
<i>No Scaffold Needed</i>	12 (40%)	14 (33%)
Children in Home		
<i>Partner is Scaffold</i>	0 (0%)	20 (48%)
<i>Double Scaffold</i>	10 (33%)	7 (17%)
<i>Modular Scaffold</i>	8 (27%)	1 (2%)

Note: As shown in Table 2, those with no scaffold needed or partner is scaffold had higher temporal sovereignty, while those with double or modular scaffold had low temporal sovereignty.

Figure 1. How Temporal Sovereignty Shapes Isolation at Work

