EUROPEAN JOURNAL OF WORK AND ORGANIZATIONAL PSYCHOLOGY
https://doi.org/10.1080/1359432X.2026.2622933

Hybrid work and daily energy dynamics: breaks, inclusion, and evening recovery

Stacey L. Parker [a], Niamh Dawson [b], Charlotte Keenan [a], Sabine Sonnentag [c], Andrew Neal [a] and Nerina L. Jimmieson [d]

[a]School of Psychology, University of Queensland, Brisbane, Australia; [b]University of Sydney Business School, University of Sydney, Sydney, Australia; [c]School of Social Sciences, University of Mannheim, Mannheim, Germany; [d]School of Management, Queensland University of Technology, Brisbane, Australia

ABSTRACT

Employees and employers alike are striving to realize the potential of hybrid work. Based on energy, recovery, and remote work intensity theories, we expected that daily fluctuations in work locations (i.e. remote versus onsite) provide employees different opportunities for energy-related mechanisms (i.e. taking breaks as needed versus feeling included), which would have consequences for daily energy levels and evening recovery experiences. Using a daily diary study with morning, workday, and evening surveys ($n = 3{,}138$ days; $N = 271$ employees), multilevel path analysis revealed that, on days spent onsite at their workplace, employees feel more included, energized, and have better recovery experiences (i.e., detachment and relaxation) that evening. Conversely, on days spent remotely, employees can take more breaks as needed, ending the day more energized and then better able to detach and relax that evening. These findings reveal new theoretical insights into the dynamics of how work location affects hybrid worker daily energy levels and evening recovery. Practical implications point to the importance of considering these energy-related trade-offs of daily variation in work locations. For example, by considering the consequences of where work is executed and the need to balance opportunities for autonomy and connection across onsite and remote locations.

ARTICLE HISTORY
Received 30 April 2025
Accepted 22 January 2026

KEYWORDS
Hybrid work; work breaks; inclusion; energy; recovery

Hybrid working, where employees conduct some of their work from home or another non-work location for at least some of their regular work pattern (Gajendran et al., 2024), has become increasingly desirable among employees and is often touted as the new normal (Aksoy et al., 2022; Allen et al., 2024; Dowling et al., 2022). As a result, employers are grappling with how to manage these work arrangements and harness the potential. At the same time, scholars are trying to understand the phenomenon of hybrid working more deeply. This form of work entails dynamic switches in where, when, and how work activities are executed, which has implications for both individual employee and team functioning (Lauring & Jonasson, 2025). A recent meta-analysis found that job attitudes and performance are higher for employees who spend a greater proportion of their time working remotely, however there was no relationship between remote work intensity and employee well-being (Gajendran et al., 2024). This finding is surprising, given that hybrid/remote work is perceived to reduce commute times and increase flexibility (Aksoy et al., 2022), factors associated with greater work-life balance and well-being (Beckel & Fisher, 2022). However, there are two main problems with the conclusion that hybrid working has no bearing on employee well-being.

First, prior research is mostly cross-sectional and relies on comparisons between people who work remotely and those who do not (Gajendran et al., 2024; for exceptions see: Delanoeije & Verbruggen, 2020; Toscano et al., 2025). This approach is problematic, as the work location of hybrid workers varies day by day. The experience of juggling these dynamic switches in work location, and associated ways of working (i.e., modalities, temporality), is unique for hybrid workers, yet the dynamics of work location are not yet fully explored (Lauring & Jonasson, 2025). With this in mind, the anticipated well-being benefits of hybrid work may not be absent, but are instead embedded in the daily fluctuations of work location. Second, prior research has mostly focused on negative indicators of well-being (i.e., stress, burnout). However, it may be important to consider positive day-level indicators of well-being dynamics, like energy and recovery (Ilies et al., 2015; Quinn et al., 2012; Venz et al., 2024), to reveal not only the daily process as it unfolds, but also possibly the benefits of enacting hybrid working for well-being (Lauring & Jonasson, 2025).

CONTACT Stacey L. Parker s.parker@psy.uq.edu.au

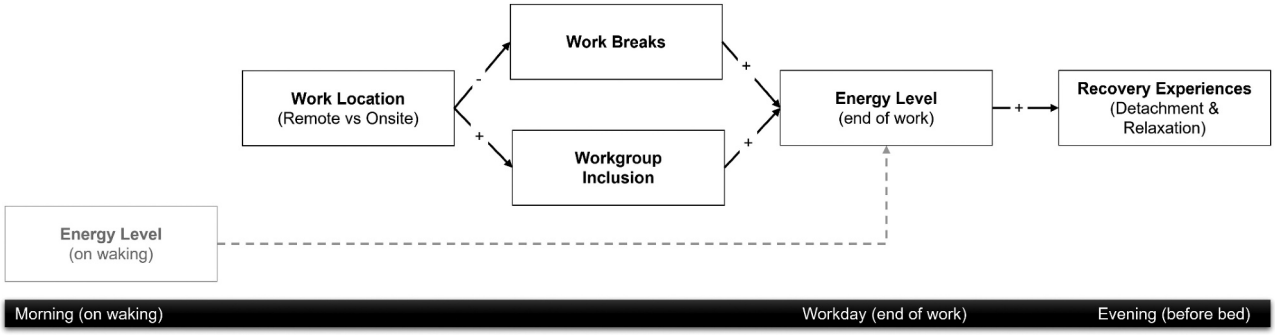

Figure 1. Conceptual model.

Thus, in our study, we focus on employees' daily energy levels and subsequent recovery experiences after work as positive indicators of well-being unfolding within the day (Ilies et al., 2015; Quinn et al., 2012; Venz et al., 2024). Building on findings of the broader hybrid/remote work literature (Gajendran et al., 2024; Lauring & Jonasson, 2025), we argue that daily work location relates to daily energy and recovery experiences via two main pathways: *more opportunity to take work breaks as needed* when working remotely versus *more opportunity to experience workgroup inclusion* when working onsite. Figure 1 summarizes our approach. To evaluate this daily impact of work location on energy and recovery via the proposed mechanisms (i.e., work breaks, inclusion), we conducted a daily diary study with hybrid workers.

We make three main contributions. First, by examining the full process over the course of the workday and into the evening, we reveal the overall impact of daily fluctuations in work location for factors relevant to employee well-being (i.e., daily energy levels and recovery experiences). Second, by examining work breaks as an energy-related mechanism, we build on earlier research about behaviours that are important for daily energy (Lyubykh et al., 2022) yet under-explored in the context of hybrid working. Third, by examining felt inclusion, we expand the nomenclature on isolation for hybrid/remote workers (Gajendran et al., 2024). Workgroup inclusion represents feeling you belong *and* can be your unique self (Shore et al., 2011), and although it has been promoted as important for hybrid work (Dowling et al., 2022), empirical insights are only just now emerging (e.g., Dhanani et al., 2024; Schertler et al., 2024). Overall, we aim to inform how daily variation in work location shapes energy during work and recovery experiences after work is done, with a view to informing new practical strategies for realizing the potential of hybrid work arrangements.

Theoretical background: hybrid work, energy, and recovery

Energy and recovery theories suggest that energy (i.e., feeling vital and alert) is a dynamic resource that is used up through daily effort expenditure on work (Meijman & Mulder, 1998; Quinn et al., 2012; Sonnentag, 2018). According to the effort-recovery model (Meijman & Mulder, 1998), when the demands of work are too high and the resources (i.e., autonomy, support) available to cope with these demands are not sufficient, then work drains energy and risks longer-term detrimental health consequences. Over the shorter-term, dynamic energy theory (Quinn et al., 2012) argues that employees are sensitive to energy loss and are proactive in managing their energy during the workday by putting their resources to use (e.g., taking breaks as needed). This thinking is aligned with the effort-recovery model (Meijman & Mulder, 1998), which also argues that employees regulate their effort (i.e., withdraw or minimize effort as needed) to mitigate the negative load implications of demanding work on their energy (and other health and well-being states). Meanwhile, theoretical accounts of the recovery paradox (Sonnentag, 2018) assume that demanding work makes recovery more difficult because of depleted energy. According to these accounts, if limited energy is left over at the end of the workday, then self-regulatory capability is impaired and there is less potential for attaining highly needed recovery experiences.

Collectively, these theoretical approaches on energy and recovery suggest that: 1) daily experiences of work can shift one's energy level around a set point, 2) there are things employees can do and/or be exposed to on a daily basis that influence their energy level, and 3) when an employee ends the day more depleted than usual, this lack of energy can spill over into non-work time and derail the attainment of recovery experiences. Conversely, when energy is at a more acceptable level by the end of working, then there is more capacity for

recovery that evening. Although these energy and recovery approaches help to understand the daily process, they are silent on the specific mechanisms at play in the context of hybrid work.

Turning to the hybrid/remote work literature, the work location (i.e., where) shapes different modalities and temporality of working (i.e., how, when; Lauring & Jonasson, 2025), and thus variance in the opportunity for employee autonomy and connection (Gajendran et al., 2024). The dual pathway model of remote work intensity identifies two main mechanisms by which hybrid work can affect employee outcomes (Gajendran et al., 2024). According to the model and the supporting meta-analytic results, although working remotely can afford one more *autonomy*, at the same time, it is also *isolating*, which is why remote work has mixed or nuanced effects on a range of employee outcomes. As already highlighted, although the Gajendran et al. (2024) meta-analysis revealed many benefits of hybrid working, it also revealed non-significant impacts for well-being outcomes (e.g., stress, burnout, work-life interference). One might be surprised by this non-significant finding, given the thinking behind the employee value proposition of hybrid work (i.e., to feel well, manage work-life balance) and, as well, because of the otherwise positive benefits of remote work for a range of job attitudes (e.g., satisfaction, commitment) and other outcomes, including supervisor-rated job performance. However, benefits (or costs) for well-being might be more temporary, perhaps unveiled when examined on a daily basis, rather than in between-person comparisons. Moreover, the mixed effects may be explained by countervailing energy conserving versus draining mechanisms of days working remotely.

Inspired by the dual pathway model (Gajendran et al., 2024), we sought to identify key energy-related mechanisms aligned with the dimensions of autonomy and isolation, that are affected by variation in work location (i.e., onsite versus remote). We expect that days working remotely should allow more *autonomy* to take breaks as needed, which protects daily energy. Conversely, days working remotely should result in more *isolation* from one's workgroup, and thus, less opportunity for inclusion, which risks daily energy. Below we outline why we focus on these mechanisms and justify our hypotheses.

Hypothesis development: energy-related mechanisms of hybrid work

Work breaks

Work breaks have been found to be important for employee energy and well-being (Lyubykh et al., 2022; Quinn et al., 2012; Zacher et al., 2014) and in particular for remote worker well-being. When remote workers take fewer breaks, they experience more physical health complaints (i.e., headaches), but also, more compromised after work recovery (i.e., more fatigue, sleep problems; Cropley et al., 2023). During the pandemic and the rapid shift to remote work arrangements, there was concern that employees would work longer hours and take less breaks, potentially due to a lack of social cues or interruptions that naturally facilitate breaks when working onsite (e.g., a chat around the water cooler), or alternatively, due to a sense of being monitored and/or pressured to be constantly available and accessible when working remotely (McPhail et al., 2023). However, when working remotely, although employees tend to work slightly longer hours, they also tend to take more breaks and/or longer breaks (for reviews see: Cruz-Ausejo et al., 2023; Fauzi & de Lucca, 2022), potentially due to greater autonomy in terms of scheduling, which favours rest breaks and the distribution of work hours across the day.

Remote versus onsite workdays are likely to vary in terms of how and when work gets done. Remote workdays likely have more *asynchronous temporality* of working (Lauring & Jonasson, 2025), meaning individuals decide the pace and scheduling of their work more independently. Guided by the dual pathway model of remote work intensity (Gajendran et al., 2024), we suggest that working remotely from a non-work location (e.g., home, cafés), as compared to onsite from a work location, should afford more autonomy to take breaks as needed during the workday, likely because of more freedom to select and schedule one's work and rest activities throughout the day (Cruz-Ausejo et al., 2023; Fauzi & de Lucca, 2022). Conversely, days working onsite should have more *synchronous temporality* of working (i.e., work is more collaborative and performed with others in real time: Lauring & Jonasson, 2025). As a consequence, one's opportunity to take breaks as needed throughout the day is likely to be more limited, due to less individual autonomy over the pace and scheduling of work (Gajendran et al., 2024). Thus, we expect:

> **Hypothesis 1:** On days when working from a remote (vs onsite) location, an employee can take more work breaks as needed during work.

There is increasing interest in work breaks as a within-day mechanism for the momentary recovery of energy during the workday (Lyubykh et al., 2022; Trougakos & Hideg, 2009). Although work breaks have no overall direct impact on employee job performance (i.e., breaks can be both good and bad for performance), work

breaks are beneficial for energy and other well-being indicators (Albulescu et al., 2022). Indeed, even short "microbreaks" taken throughout the workday are found to enhance vitality and lower fatigue (Kim et al., 2018; Zacher et al., 2014).

Dynamic energy and momentary recovery theories (Quinn et al., 2012; Trougakos & Hideg, 2009) suggest that break-taking should be autonomous and rooted in recovery needs, for it to be an effective energy management approach. Prior cross-sectional research demonstrates that when breaks are taken as needed and fit within natural work patterns, then employees experience less tension, stress, and exhaustion, but they do not disengage from work (Wilkes et al., 2018). Moreover, daily diary research shows that when break-taking is more intentional and frequent throughout the workday, employees feel less distressed and fatigued by the end of working (Blasche et al., 2017). Thus, we expect:

> **Hypothesis 2:** On days when an employee takes more work breaks as needed during work, they have more energy by the end of working.

Workgroup inclusion

Employee inclusion manifests at multiple organizational levels; however, an individual's sense of felt inclusion is heavily shaped by the interactions, relationships, and daily experiences within their immediate workgroup, which exert the most proximal influence on how included they feel (Chung et al., 2020; Randel, 2025). The rise of hybrid work arrangements has resulted in growing concerns for felt inclusion (Dowling et al., 2022), with both pros and cons identified. While remote/hybrid work might allow some employees to feel safer and more included (e.g., women, people of colour, neurodivergent), at the same time, remote/hybrid work might undermine inclusion efforts by not having these workers regularly be a part of the work environment. A key concern is the finding that remote work increases social isolation (Gajendran et al., 2024), which can undermine organizational strategies aimed at creating more inclusive work environments, both in terms of facilitating a sense of belonging, but also, encouraging that everyone can be their unique selves, which together bring about felt inclusion (Shore et al., 2011).

Even before the pandemic gave rise to academic interest in this topic, there was evidence highlighting the social isolation risks that can transpire from engaging in remote work. For example, studies demonstrate working remotely can create barriers to communication and coordination (Hinds & Bailey, 2003), a sense of disconnection from the organization's broader goals (Gajendran & Harrison, 2007), and feelings that one is less included at work when compared to in-office counterparts (Morganson et al., 2010). Indeed, similar patterns have emerged in the post-covid world, with the prevalence of remote work continuing to be common. Remote/hybrid work comes with a reduction in face-to face contact and informal exchanges with co-workers (Morrison-Smith & Ruiz, 2020). These informal exchanges are necessary for accessing social support (Dhanani et al., 2024). Qualitative research also suggests employees feel most included when working face-to-face, because it helps them feel more socially connected (Dhanani et al., 2024). Moving beyond these qualitative insights, Schertler et al. (2024) used a random intercept cross-lagged panel model to confirm longitudinally that when employees work remotely, they feel less included in their workgroups.

Across these studies, there is clear and consistent evidence that remote work can undermine an employee's sense of inclusion. Integrating this research with theories of remote and hybrid work (Gajendran et al., 2024; Lauring & Jonasson, 2025) helps to explain why remote workdays can negatively impact inclusion. Days spent working remotely are more isolating from one's usual workgroup (Gajendran et al., 2024) and also involve more asynchronous work and digital communication (Lauring & Jonasson, 2025). These modes of working involve less opportunity for face-to-face contact and spontaneous exchanges with co-workers in real time, factors which are essential for feeling inclusion (Dhanani et al., 2024; Schertler et al., 2024). Thus, we suggest that days spent working remotely compromises feelings of inclusion from one's workgroup, because of the isolating effects of having less opportunities for in-person and real-time connection. Conversely, working onsite facilitates more workgroup inclusion, due to greater opportunities for these ways of connecting.

> **Hypothesis 3:** On days when working from an onsite (vs remote) location, an employee will feel more workgroup inclusion during work.

Although inclusion has not been examined as an energy mechanism in the recovery process (Sonnentag et al., 2022), several studies point to its energizing potential. A growing body of research links inclusion with lower emotional exhaustion and higher affective well-being (Humphrey et al., 2024; Li et al., 2022; Merlini et al., 2025). Similarly, Iqbal et al. (2025) used time-lagged data to demonstrate that inclusive leadership fostered relational energy among neurodivergent employees.

Together, these findings suggest that feeling included at work helps sustain employees' energy.

Research on social support and connection further explains why inclusion can support energy. Beyond instrumental support, positive workplace relationships provide important interpersonal resources, like assistance and friendship (Colbert et al., 2016), which may be protective of energy loss when working (Meijman & Mulder, 1998; Quinn et al., 2012). Indeed, qualitative research with remote workers suggests the absence of interpersonal support is experienced as "energy draining" (Pensar & Mäkelä, 2023). Beyond the receipt of support and other interpersonal resources, inclusion might also conserve energy through self-regulatory mechanisms. When employees feel included, they can engage more authentically and confidently, without expending effort on self-monitoring, impression management, or regulating negative affect (Leary & Downs, 1995; Reis et al., 2000). This state of being reduces regulatory strain and enables energy to be conserved and reallocated throughout the workday. Inclusion thus sustains energy both interpersonally, by affording access to supportive social exchanges, and intrapersonally, by reducing self-regulatory strain. As such:

Hypothesis 4: On days when an employee feels more inclusion during work, they have more energy by the end of working.

Implications for evening recovery experiences

Recovery is typically conceived of as a process of unwinding from the demands of work and can be studied as a state of recovery and/or the achievement of recovery experiences (Sonnentag et al., 2022). In this study, we focused on the recovery experiences of psychological detachment and relaxation. Psychological detachment involves mental distance from work during non-work time, and relaxation low psychological and physical activation (Sonnentag & Fritz, 2007). Attaining these specific recovery experiences is important, as meta-analyses have shown that detachment and relaxation are substantially associated with a broad range of indicators of health and well-being (Headrick et al., 2023; Steed et al., 2021), with most effect sizes exceeding those of other recovery experiences (i.e., mastery, control).

To date, research on the impact of work location on recovery processes is quite limited (Agolli & Holtz, 2023; Sonnentag et al., 2022). Pre-pandemic cross-sectional research suggests that working across time (i.e., "anytime"; longer, more varied hours) results in less detachment, but working across space (i.e., "anywhere"; different locations as needed) has no effect on detachment (Mellner et al., 2016). Qualitative research suggests that various energy-consuming aspects of remote work (i.e., poor spatial and temporal boundaries, and the lack of social support) can make detachment more difficult for teleworkers (Pensar & Mäkelä, 2023). However, a recent diary study revealed countervailing effects of flexible work on detachment and other recovery processes, with flexibility demands having the potential to cause both work-life conflict and enrichment processes (Kubicek et al., 2022). Thus, a work location, in and of itself, might not directly impact on recovery experiences. Daily influences on evening recovery could be more indirect, for instance, via the energy drain of the workday. Negative implications for recovery might be more evident on days when energy has been depleted more than usual for an employee, that is, when energy levels are relatively more depleted than their normal or average levels. As previously outlined, according to the recovery paradox (Sonnentag, 2018), transitioning from work to leisure time with depleted energy reserves can compromise the potential for recovery that evening. According to this paradox thinking, the negative spillover effect from work to nonwork is thought to occur because, once already depleted of energy, it is more challenging to self-regulate oneself in order to achieve psychological detachment and relaxation.

Psychological detachment from work during nonwork time requires redirecting one's attention from work to another thought content (Sonnentag & Fritz, 2015). To be able to "switch off" from work, one needs to inhibit job-related thoughts (Brosschot et al., 2006) and focus on non-work matters instead (Hahn et al., 2012). Suppressing unwanted thoughts (i.e., job-related thoughts after work) requires self-regulatory resources (Hofmann et al., 2012). These self-regulatory resources, however, are scarce when energy is depleted at the end of the workday (Lian et al., 2017). Similarly, relaxation requires downregulating negative activation that resulted from stressful work experiences (Iser-Potempa et al., 2024). Again, lack of self-regulatory resources makes it difficult to influence negatively activated states (Grillon et al., 2015), impeding subsequent relaxation. Indeed, prior daily diary studies, which account for between-persons variance, show depleted energy at the end of a workday compromises recovery that evening, including both detachment and relaxation experiences (Cangiano et al., 2021; Xanthopoulou et al., 2018). Thus, we predict:

Hypothesis 5: On days when an employee has less energy by the end of working, they experience less detachment and relaxation that evening.

Drawing on the dual pathway model of remote work intensity (Gajendran et al., 2024) and following our theorizing (Hypotheses 1–5), we also expect serial indirect effects as part of the full conceptual model (see Figure 1). More specifically, working from an onsite (vs remote) location will have negative indirect effects on daily energy level and recovery experiences through reduced autonomy (i.e., less work breaks), but positive indirect effects on daily energy level and recovery experiences through reduced isolation (i.e., more inclusion). Although there is existing evidence for some of the component paths we have theorized, our study provides a complete and simultaneous test of these mechanisms and the full process, as it unfolds across the day and into the evening. In this way, we evaluate the potentially countervailing effects for energy, and in turn recovery, of working from an onsite versus a remote location each day.

Method

Design and procedure

This daily diary study was conducted over three work weeks (i.e., Monday to Friday) with Australian employees completing surveys at three times each day: in the morning (6 am − 9am) to assess energy levels upon waking (to be used as a planned control variable); at the end of the workday (4 pm−7pm) to measure work location, workgroup inclusion, work breaks, and energy levels at the end of working; and in the evening (9 pm −12am) to evaluate recovery experiences before bed. Participants were recruited using convenience sampling, including professional networks and social media advertisements. Participants were offered the opportunity to enter a prize draw and receive personalized feedback at the conclusion of the study, along with a research-based tip sheet on recovery strategies.

To be eligible for participation, individuals were required to meet the following criteria: be over 18 years of age; reside in any Australian time zone throughout the data collection period; be employed in a single company or position for at least 29 hours per week during standard daytime business hours; and have reliable internet access. A custom-made web-based application automated the all stages of the research: sign-up and consent; completion of a baseline survey; time-zone specific survey reminders for the experience sampling component; and the personalized feedback report after participation.

The data presented here forms part of a larger project, where 761 eligible participants signed up to the study and completed a baseline survey. Of this sample, we retained 413 participants who provided at least two responses to each experience sampling survey (i.e., morning, work, evening), for the purposes of multilevel modelling. Specific to this study, 271 of these participants were characterized as "hybrid workers", determined through items in the baseline survey where they reported having flexibility in determining their work location. Chi-square tests and t-tests revealed no differences in age ($p = .247$), gender ($p = .240$), or weekly work hours ($p = .108$) between the retained hybrid participants and non-retained sample. However, the retained hybrid workers ($M = 4.48$, $SD = 1.42$) did have lower baseline emotional exhaustion compared to those without work location flexibility ($M = 5.31$, $SD = 1.31$) ($p < .001$). The retained hybrid worker sample provided $n = 3{,}020$ ($M = 11.14$, $SD = 4.17$) morning surveys, $n = 2{,}569$ ($M = 9.48$, $SD = 4.00$) end of workday surveys, and $n = 2{,}744$ ($M = 10.13$, $SD = 4.44$) evening surveys. The survey compliance ranged from 63% to 74%.

Participants

Average age was 40.46 years ($SD = 8.14$, range: 20–68). The sample comprised individuals who identified as women (57.6%, $n = 156$) and men (41.7%, $n = 113$), with two individuals who identified as non-binary or preferred not to say. Participants worked mostly full-time hours each week ($M = 40.87$, $SD = 5.68$) and had a mean job tenure of 3.44 years ($SD = 3.77$). Participants were mostly highly educated, with the majority having a university degree or higher (80.7%). The highest frequency occupational group was professionals (48.7%, $n = 132$), for example, teachers, researchers, and allied health workers, followed by managers ($n = 74$), clerical and administrative workers ($n = 23$), community and personal service workers ($n = 10$), trades/labourers, machinery operations, and drivers ($n = 9$), sales workers ($n = 8$), and 15 participants did not disclose a specific occupation. A total of 55% of the sample supervised other employees.

Measures

See Table 1 for the descriptives, reliabilities, and correlations. Unless otherwise stated, all measures used a 7-point Likert response scale (1 = strongly disagree to 7 = strongly agree).

Work location

The location where work took place was measured in the end of workday survey with a custom categorial item. We asked, "*From what location did you primarily work today?*", with options: workplace or another

Table 1. Descriptives and correlations.

Variable	*Range*	*M*	*SD*	*ICC*	*wω*	*bω*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Work Location[a]	0–1	0.61	0.49	.40	–	–	–	−.14	.16	−.08	−.05	−.04	.01	.79	−.27	−.20	−.40	−.14	.07	.15	−.11	.13
2. Work Breaks	1–7	4.41	1.57	.49	.863	.960	−.08	–	−.00	.10	.13	.09	−.02	−.12	.03	.15	.18	.18	−.08	−.22	.29	−.10
3. Workgroup Inclusion	1–7	5.55	1.11	.61	.895	.981	.20	.24	–	.07	−.00	−.01	.04	.20	.09	−.01	−.04	−.05	.05	.14	.07	.06
4. Energy Level (workday)	1–7	4.10	1.23	.43	–	–	.04	.27	.26	–	.10	.12	.25	−.08	.04	.07	.08	.07	−.00	−.06	.12	−.10
5. Recovery Detachment	1–7	4.57	1.60	.35	.866	.945	−.07	.41	.17	.30	–	.50	.03	−.04	−.04	.03	.04	.03	−.17	−.11	.10	−.12
6. Recovery Relaxation	1–7	4.67	1.59	.35	.899	.955	.09	.42	.26	.35	.53	–	.02	−.03	−.05	.06	.00	.02	−.18	−.11	.07	−.11
7. Energy Level (morning)	1–7	4.64	1.33	.50	–	–	.08	.26	.22	.66	.26	.34	–	.02	.03	−.01	−.03	.03	.02	.06	.01	−.00
8. F2F Communication	1–7	3.82	2.27	.44	–	–	.87	−.01	.32	.09	−.03	.09	.08	–	−.34	−.18	−.36	−.10	.09	.12	−.10	.12
9. Virtual Communication	1–7	4.45	1.59	.46	–	–	−.19	−.04	.29	−.11	−.08	−.10	−.14	−.16	–	.04	.13	.02	.05	.08	.09	.05
10. Work Hours Control	1–5	3.10	1.30	.71	–	–	−.38	.16	.03	−.03	.04	.17	−.03	−.32	.04	–	.48	.04	−.10	−.08	.22	−.04
11. Work Location Control	1–5	3.13	1.42	.66	–	–	−.62	.16	−.05	−.09	.03	.08	−.04	−.56	.18	.80	–	.08	−.06	−.07	.20	−.07
12. Break Minutes	0–430	38.05	32.02	.25	–	–	−.36	.22	−.05	−.07	.05	−.00	.03	−.35	.05	.06	.22	–	.14	−.11	.08	−.06
13. Work Hours	1–16	8.49	1.51	.29	–	–	.04	−.28	−.05	−.17	−.35	−.17	−.06	.02	.07	−.12	−.07	.06	–	.17	−.04	.07
14. Workload	1–7	4.70	1.43	.54	.816	.921	.08	−.50	.07	−.07	−.39	−.29	−.06	.11	.17	−.09	−.09	−.09	.38	–	−.09	.18
15. Work Control	1–5	3.13	1.01	.41	.807	.941	−.05	.33	.33	.05	.24	.29	.04	.03	−.02	.42	.35	.00	−.37	−.19	–	−.09
16. Work Interruptions	1–7	5.63	1.94	.48	–	–	.11	−.30	−.06	−.11	−.44	−.15	−.14	.09	.18	−.09	−.11	−.07	.24	.41	−.22	–

Note. $n = 3{,}353$, $N = 271$; M = Mean at the between-persons level; SD = Standard Deviation at the sample level. *ICC* = Intraclass Correlation Coefficient, which represents the proportion of between-level or person-level variance; ω = Omega reliabilities reported at within-persons (*w*) and between-persons (*b*) levels; F2F = Face-to-Face; Within-persons correlations appear on the upper diagonal, between-persons on the lower diagonal. [a] Work location was coded as 0 = Remote (i.e., home or other non-work location), 1 = Onsite (i.e., workplace or other work location).

work-related location; home or another non-work-related location; a combination of work and non-work related locations; or a different location (please describe). Responses were then categorized as a remote location (e.g., home or other non-work location) or an onsite location (e.g., onsite at workplace or other work-related location). Less than 5% of the workdays were reported as a mix of onsite or remote locations or were unable to be clearly coded based on participant descriptions. Work location for these days was re-coded as missing. This procedure provided $n =$ 1,432 days primarily in an onsite location (coded as "1") and $n = 925$ days primarily in a remote location (coded as "0"). Thus, a higher score on the work location variable reflects an onsite versus a remote location. As per Table 1, based on the surveys submitted during the monitoring period, the mean proportion of days spent primarily onsite was $M = 0.61$ ($SD = 0.49$), which suggests employees were working on average approximately 2 days per week remotely.

Work breaks

In the end of workday survey, the breaks subscale from the Workplace Interruptions Measure (Wilkes et al., 2018) assessed participant's break-taking behaviour throughout the workday. The participants responded to three items that assessed freedom to take breaks over the course of the workday (e.g., "*Today … when I grew tired on a work task, I took a break*").

Workgroup inclusion

Workgroup inclusion was measured in the end of workday survey using an adapted version of the Work Group Inclusion Scale (Chung et al., 2020). The stem for the items was "*Today … "*, with an example belongingness item of "*I was treated as a valued member of my work group*" and an example uniqueness item of "*People in my work group listened to me even if my views were dissimilar*".

Energy level

We measured energy level at the end of the workday through a novel pictorial battery scale (Weigelt et al., 2022). Participants were provided with the following instruction of "*How one feels at the moment is often described in terms of the state of charge of a battery, ranging from 'depleted' to 'full of energy'. Please indicate which of the following symbols best describes your current state.*" The response options were coloured icons of a charging battery, where 1 was "depleted" and 7 was "full of energy". This energy level battery scale also was assessed in the morning survey, to be used as a planned control variable.

Recovery experiences

Recovery experiences were assessed in the evening survey through the Recovery Experience Questionnaire (REQ; Sonnentag & Fritz, 2007). This scale evaluates the participants' attainment of important recovery experiences that evening. We assessed three representative items relating to detachment and three items relating to relaxation. The items stemmed from "*Tonight, I … "* and for example included for detachment "*forgot about work*" and for relaxation "*kicked back and relaxed*".

Control variables

We included a range of other measures to be used as control variables in sensitivity analyses (Becker et al., 2016). In the end of workday survey, we assessed alternative dimensions of hybrid work that are intertwined with work location (i.e., work modalities, temporality; Lauring & Jonasson, 2025). More specifically, daily variation in the extent of virtual and in-personal communication, as well as daily flexibility control over work time and work location were assessed. The communication items were adapted from Hill et al. (2014) and assessed on a 7-point scale from 1 (never) to 7 (all of the time), including "*Today … I communicated with my coworkers face-to-face*" and "*Today … I communicated with my coworkers via virtual communication media (e.g., email, instant messaging, video-conferencing etc.).*" Flexibility control over work time and location were measured using single items based on Shao et al. (2021). We asked, "*Which of the following statements best describes the [location from which/hours] you worked today?*", where 1 = your employer decided the [location from which/hours] you worked to 5 = you decided the [location from which/hours] you worked.

In the workday survey, we also assessed some alternative operationalizations and potential confounders of our energy mechanisms, including daily time spent on work breaks, work hours, work control, workload, and work interruptions. Time spent on work breaks was asked with a single item "*If you took a lunch break or any other types of breaks, what was the total time spent on breaks today (in minutes)? Please enter zero if you did not take any break/s*". Work hours were calculated through self-reported start-time and finish-time. Work control was measured through three items from Cousins et al. (2004); e.g., *Today … I had some say over the way I got my work done*). Workload was measured with three items from Spector and Jex (1998; e.g., *Today … my job required me to work very hard*). Interruptions were measured through the item from Spector and Jex (1998)'s organizational constraints scale, which was "*Today at work, I found it difficult or impossible to do my job because of … interruptions by other people.*"

Table 2. Multilevel confirmatory factor analysis.

Constructs and Items	λ (SE)
Work Breaks	
Today … When I grew tired on a work task, I took a break.	0.797 (0.010)
Today … I took a break from work tasks when I needed one.	0.923 (0.009)
Today … I had breaks that fit with my natural work rhythm.	0.737 (0.012)
Workgroup Inclusion	
Today … I was treated as a valued member of my work group. (B)	0.850 (0.007)
Today … I belonged in my work group. (B)	0.926 (0.006)
Today … I was connected to my work group. (B)	0.808 (0.009)
Today … People in my work group listened to me even if my views are dissimilar. (U)	0.774 (0.010)
Today … I was comfortable expressing opinions that diverged from my group. (U)	0.859 (0.008)
Today … I felt I was able to share perspectives on work issues that were different from my group members. (U)	0.871 (0.008)
Detachment Recovery Experience	
Tonight, I … forgot about work.	0.948 (0.007)
Tonight, I … did not think about work at all.	0.824 (0.008)
Tonight, I … got a break from the demands of work.	0.658 (0.013)
Relaxation Recovery Experience	
Tonight, I … kicked back and relaxed.	0.904 (0.006)
Tonight, I … used the time to relax.	0.937 (0.005)
Tonight, I … took time for leisure.	0.754 (0.010)

Note. Standardized within-level loadings. All items loaded on their respective factors $p < .001$. B = belongingness element of inclusion; U = uniqueness element of inclusion.

Finally, in the evening survey, in addition to our measures of *D*etachment and *R*elaxation we included other recovery experiences, including control (also called *A*utonomy) and *M*astery (Sonnentag & Fritz, 2015), as well as *M*eaning and *A*ffiliation (Newman et al., 2014; Virtanen et al., 2021), which together form the DRAMMA model of recovery experiences (see Sonnentag et al., 2022 for a review). We included these further recovery experiences to evaluate if the hypothesized effects were unique to detachment and relaxation, or if the proposed energy processes also extended to other recovery experiences.

Confirmatory factor analysis

Using Mplus v8.10, we conducted a Multilevel Confirmatory Factor Analysis (ML-CFA) on the multi-item constructs (i.e., work breaks, inclusion, detachment, relaxation) of our hypothesized model. As inclusion is defined as the *simultaneous* experience of belongingness and uniqueness, we included a higher-order factor of inclusion (Chung et al., 2020; Randel, 2025). This was especially important, as its subdimensions were highly correlated in our data ($r_W = .70$, $p < .001$). Table 2 provides the standardized within-level factor loadings. The lower-order factors of belongingness and uniqueness loaded > .80 on the higher-order factor of inclusion. The overall model fit was good, $\chi^2(164) = 701.41$, $p < .001$, CFI = .980, TLI = .975, RMSEA = .032, SRMR(W) = .034, SRMR(B) = .043.

Results

Data analysis strategy

Data were nested ($n = 3{,}138$ days; $N = 271$ employees; M days per employee = 11.58) and deemed suitable for multilevel modelling (see Table 2). We specified a multilevel path model (Preacher et al., 2010) to test the expected direct and associated indirect effects. Morning energy level was included as a control variable (as per Figure 1).

Hypothesis testing

Table 3 reports the results, including a summary of the multilevel direct and indirect effects. Unstandardized within-persons effects are reported. As per Table 3, supporting Hypothesis 1, when work took place at an onsite location, participants took less work breaks during the day, $b = -0.42$, $SE = 0.06$, 95% CI [−0.54; −0.29], $p < .001$. Supporting Hypothesis 2, when more work breaks were taken, energy levels were higher at the end of the workday, $b = 0.07$, $SE = 0.02$, 95% CI [0.04; 0.10], $p < .001$. Supporting Hypothesis 3, on workdays spent at an onsite location, participants experienced more inclusion during the workday, $b = 0.29$, $SE = 0.04$, 95% CI [0.21; 0.37], $p < .001$. Supporting Hypothesis 4, when there was more inclusion during the workday, energy levels were higher by the end of the workday, $b = 0.10$, $SE = 0.03$, 95% CI [0.04; 0.15], $p < .001$. Supporting Hypothesis 5, on workdays when end-of-day energy levels were higher, recovery experiences were higher that evening for: (a) detachment ($b = 0.14$, $SE = 0.03$, 95% CI [0.07; 0.20], $p < .001$) and (b) relaxation ($b = 0.16$, $SE = 0.03$, 95% CI [0.10; 0.22], $p < .001$).

In support of the model, there was a negative indirect effect of onsite (vs remote) location on detachment, via less work breaks and energy, $b = -0.004$, $SE = 0.001$, 95% CI [−0.007; −0.001], $p = .006$. Similarly, there was a negative indirect effect of onsite

Table 3. Summary of multilevel direct and indirect effects.

Location (P)	*Energy Mechanism (M1)*	*Energy Level (M2)*	*Recovery (C)*	*P-M1*	*M1-M2*	*M2-C*	*Total Effect*	*Direct Effect*	*Total Indirect Effect*	*Specific Indirect Effect*
							Within Level B (SE)			
Work Location	Work Breaks	Energy	Detachment	−.42 (.06)***	.07 (.02) ***	.14 (.03) ***	−.19 (.08) *	−.16 (.08)	−.03 (.01) **	−.004 (.001) **
Work Location	Inclusion	Energy	Detachment	.29 (.04)***	.10 (.03) ***	.14 (.03) ***	−.19 (.08) *	−.16 (.08)	−.03 (.01) **	.004 (.002) *
Work Location	Work Breaks	Energy	Relaxation	−.42 (.06)***	.07 (.02) ***	.16 (.03) ***	−.14 (.08)	−.11 (.08)	−.03 (.01) **	−.005 (.002) **
Work Location	Inclusion	Energy	Relaxation	.29 (.04)***	.10 (.03) ***	.16 (.03) ***	−.14 (.08)	−.11 (.08)	−.03 (.01) **	.004 (.002) **
							Between Level B (SE)			
Work Location	Work Breaks	Energy	Detachment	−.25 (.25)	.07 (.04)	.37 (.08) ***	−.17 (.22)	−.17 (.22)	.00 (.06)	−.007 (.01)
Work Location	Inclusion	Energy	Detachment	.53 (.19)**	.11 (.05) *	.37 (.08) ***	−.17 (.22)	−.17 (.22)	.00 (.06)	.021 (.01)
Work Location	Work Breaks	Energy	Relaxation	−.25 (.25)	.07 (.04)	.42 (.08) ***	.22 (.22)	.22 (.21)	.00 (.06)	−.008 (.01)
Work Location	Inclusion	Energy	Relaxation	.53 (.19)**	.11 (.05) *	.42 (.08) ***	.22 (.22)	.22 (.21)	.00 (.06)	.024 (.02)

Note. $n = 3{,}138$, $N = 271$. P = Predictor; M1 = First Mediator; M2 = Second Mediator; C = Criterion. The total indirect effect is the sum of the possible specific indirect effects for any P-M1-M2-C process. Work location was coded as 0 = Remote (i.e., home or other non-work location), 1 = Onsite (i.e., workplace or other work location). Unstandardized effects reported. At the within level, work breaks and inclusion were uncorrelated ($r = -.00$ ($SE = .02$), $p = .787$) and the recovery experiences were positively correlated ($r = .50$ ($SE = .02$), $p < .001$). Morning energy was included as a control variable. Morning energy predicted more energy by the end of work at both levels of analysis ($B_W = .24$ ($SE = 02$), $p < .001$; $B_B = .53$ ($SE = .05$), $p < .001$).

***$p < .001$, **$p < .01$, *$p < .05$.

location on relaxation, via less work breaks and energy, $b = -0.005$, $SE = 0.002$, 95% CI [−0.008; −0.002], $p = .004$. Additionally, in support of the model, there was a positive indirect effect of onsite (vs remote) location on detachment, via more inclusion and energy, $b = 0.004$, $SE = 0.002$, 95% CI [0.001; 0.007], $p = .012$. Similarly, there was a positive indirect effect of onsite location on relaxation, via more inclusion and energy, $b = 0.004$, $SE = 0.002$, 95% CI [0.001; 0.008], $p = .008$.

Although not hypothesized, we evaluated the potential for direct effects of work location on energy and recovery experiences. Within-persons onsite (vs remote) location predicted less end-of-day energy, $b = -0.21$ ($SE = 0.05$), 95% CI [−0.31; −0.10], $p < .001$. However, onsite (vs remote) location did not predict recovery experiences: (a) detachment, $b = -0.16$ ($SE = 0.08$), 95% CI [−0.322; 0.002], $p = .052$, or (b) relaxation, $b = -0.11$ ($SE = 0.08$), 95% CI [−0.27; 0.05], $p = .184$.

As per Table 3, for the between-persons results many of the structural paths mirrored the hypothesized effects observed within-persons (Hypotheses 3 and 4 involving inclusion; Hypothesis 5 involving energy and recovery), but some did not (Hypotheses 1 and 2 involving work breaks). However, no indirect effects were significant between-persons.

Sensitivity analyses

We evaluated a series of alternative models to test the robustness of our findings.

First, we evaluated a version of the model that did not control for that morning's energy level, which revealed the same direct and indirect effects already reported. We also controlled for prior day lags of each variable of the model, which also revealed the same direct and indirect effects already reported.

Second, although participants claimed to have location flexibility in the baseline survey, we noticed for some participants the workday surveys submitted were entirely onsite ($n = 69$) or entirely remote ($n = 38$), with one participant reporting mixed days (i.e., working across both locations every day). Our Mplus analysis should be robust to missing work location data within-persons. Moreover, it is possible that missed surveys included the other work location (i.e., so these participants may have enacted hybrid working, even though this was not captured in their surveys). Thus, we re-examined our results with a reduced sample ($N = 163$) of those *we know enacted* work location variability over the course of the study, and all significant direct and indirect effects were retained.

Third, we considered variance in modalities of hybrid work (Lauring & Jonasson, 2025). We tested if the nature of communication with co-workers each day (i.e., extent of face-to-face and virtual communication) could explain or counter the effects of work location on energy and recovery. Regarding face-to-face communication, although this was much higher on days spent onsite, $b = 3.59$ ($SE = .06$), 95% CI [−32.00; −16.93], $p < .001$, $r_w = .79$, $p < .001$, and was correlated with inclusion, $r_w = .20$, $p < .001$, it was not correlated with work breaks and did not predict energy or recovery experiences. Regarding virtual communication, although this was higher on days spent remotely, $b = -0.94$ ($SE = 0.07$), 95% CI [−1.06; −0.81], $p < .001$, $r_w = -.27$, $p < .001$, and was positively correlated with inclusion, $r_w = .09$, $p < .001$, it was not correlated with work breaks and did not predict energy. However, daily virtual communication predicted lower detachment, $b = -0.07$ ($SE = 0.03$), 95% CI [−0.13; −0.02], $p = .006$, and relaxation, $b = -0.08$ ($SE = 0.03$), 95% CI [−0.13; −0.02], $p = .004$. This said, including either in-person or virtual communication modes in the analysis did not change the reported results, with all significant direct and indirect effects retained.

Fourth, we considered if daily flexibility control over work time and location (i.e., employee choice over work hours and work location) predicted the energy-related mechanisms beyond the effects of the actual work location (Gajendran et al., 2024; Lauring & Jonasson, 2025). Interestingly, when either work time or location flexibility control is used as a predictor alongside work location, positive indirect effects arise on relaxation, via more work breaks and energy, for time control, $b = 0.002$ ($SE = 0.001$), 95% CI [0.001; 0.004], $p = .006$, and location control, $b = 0.002$ ($SE = 0.001$), 95% CI [0.001; 0.004], $p = .006$. Similarly, a positive indirect effect of work location control on detachment, via more work breaks and energy, also emerged, $b = 0.002$ ($SE = 0.001$), 95% CI [0.001; 0.004], $p = .006$. However, such effects of flexibility control did not emerge through the inclusion pathway, as neither time nor location control were associated with inclusion. All significant direct and indirect effects of the hypothesized model involving actual work location were retained, though the indirect effects of work location via work breaks and energy, on (a) detachment, $b = -0.002$ ($SE = 0.001$), 95% CI [−0.004; 0.000], $p = .024$, and (b) relaxation, $b = -0.003$ ($SE = 0.001$), 95% CI [−0.005; 0.000], $p = .019$, were weakened.

Fifth, we evaluated a range of potential alternative energy-influencing factors also likely shaped by work location (i.e., work hours, break minutes, workload, work control, and work interruptions) as control

variables. Within our model, we positioned each of these variables as alternative parallel mechanisms in separate analyses. While most of these controls involved single item measures, two constructs had multi-item scales (i.e., work control, workload). Importantly, a version of our ML-CFA as a six-factor model with these controls also included showed an acceptable fit, $X^2(344) = 1059.340$, $p < .001$, CFI = .979, TLI = .974, RMSEA = .026, SRMR(W) = .029, SRMR(B) = .047.

On days onsite employees reported longer work hours, $b = 0.27$ ($SE = 0.08$), 95% CI [0.11; 0.44], $p = .001$, less time on breaks, $b = -11.32$ ($SE = 1.63$), 95% CI [−14.52; −8.12], $p < .001$, more workload demands, $b = 0.40$ ($SE = 0.06$), 95% CI [0.29; 0.51], $p < .001$, less work control, $b = -0.25$ ($SE = 0.05$), 95% CI [−0.34; −0.16], $p < .001$, and more work interruptions, $b = 0.49$ ($SE = 0.08$), 95% CI [0.33; 0.64], $p < .001$. These findings are consistent with prior research (Cruz-Ausejo et al., 2023; Fauzi & de Lucca, 2022; Gajendran et al., 2024).

Some of these control variables were potent, having energy draining or conserving effects on daily energy (Becker et al., 2016). More specifically, daily time spent on breaks (minutes) predicted higher energy, $b = 0.001$ ($SE = 0.001$), 95% CI [0.000; 0.003], $p = .027$, workload predicted lower energy, $b = -0.05$ ($SE = 0.02$), 95% CI [−0.09; −0.01], $p = .018$, work control predicted higher energy, $b = 0.10$ ($SE = 0.03$), 95% CI [0.05; 0.15], $p < .001$, and work interruptions predicted lower energy, $b = -0.06$ ($SE = 0.01$), 95% CI [−0.08; −0.03], $p < .001$.

Regarding the impact of these control variables only one change was evident. The addition of work control weakened the indirect effect of work location on detachment, via work breaks and energy, $b = -0.003$ ($SE = 0.001$), 95% CI [−0.006; 0.000], $p = .022$. All other hypothesized direct effects and the corresponding indirect effects in our original model remained significant, even with the addition of these controls as alternative mechanisms.

Sixth, theories of inclusion describe it as involving the *simultaneous* experience of belongingness and uniqueness, reflecting an important balance between collective belongingness and valued individual uniqueness (Chung et al., 2020; Randel, 2025). Although the subdimensions of belongingness and uniqueness are together are thought to reflect the experience of inclusion, inclusion scholars increasingly value understanding the effects of its subdimensions (Chung et al., 2020; Versteegen & Adams, 2025). In our data, a ML-CFA with separate factors for the subdimensions of inclusion also fit the data well, $\chi^2(160) = 697.34$, $p < .001$, CFI = .980, TLI = .974, RMSEA = .033, SRMR(W) = .034, SRMR(B) = .039; however, the intercorrelation between the belongingness and uniqueness factors was high ($r_W = .70$, $p < .001$). Thus, to understand if one specific aspect of inclusion was more or less important, we examined these subdimensions in separate models. When analysing our model with the subdimesion of belongingness instead of overall inclusion, a greater sense of belonging is experienced on days working onsite, $b = 0.30$, $SE = 0.04$, 95% CI [0.22; 0.39], $p < .001$. Additionally, belonging predicted more end-of-workday energy, $b = 0.11$, $SE = 0.03$, 95% CI [0.06; 0.16], $p < .001$. There was a positive indirect effect of work location on detachment, via belonging and energy, $b = 0.005$, $SE = 0.002$, 95% CI [0.001; 0.008], $p = .005$, and similar positive indirect effect on relaxation, via belonging and energy, $b = 0.005$, $SE = 0.002$, 95% CI [0.002; 0.009], $p = .003$. Thus, a model with belonging mirrored our findings with overall inclusion. Conversely, when analysing uniqueness, although uniqueness occurred more on days spent onsite, $b = 0.26$, $SE = 0.05$, 95% CI [0.17; 0.35], $p < .001$, uniqueness was not significantly related to end-of-workday energy, $b = 0.05$, $SE = 0.03$, 95% CI [−0.00; 0.10], $p = .062$. Thus, the corresponding indirect effects were non-significant for work location on detachment, $b = 0.002$, $SE = 0.001$, 95% CI [0.000; 0.004], $p = .101$ and relaxation, $b = 0.002$, $SE = 0.001$, 95% CI [0.000; 0.004], $p = .095$. Thus, the full energy-recovery process involving inclusion may be more specific to the belongingness, rather than the uniqueness.

Finally, we evaluated a version of our model that also included other recovery experiences identified in the broader recovery literature (Fritz & Sonnentag, 2015; Newman et al., 2014) by adding evening autonomy/control, mastery, meaning, and affiliation experiences. Importantly, an 8-factor ML-CFA model with these additional recovery experiences included showed acceptable fit, $X^2(588) = 2307.41$, $p < .001$, CFI = .963, TLI = .956, RMSEA = .031, SMR(W) = .040, SMR(B) = .051. At the within-persons level, end of workday energy positively predicted each of these four additional recovery experiences. Not only this, but the same pattern of serial indirect effects were revealed for each of these other recovery experiences (i.e., working onsite, compared to remotely, had negative effects on recovery experiences via less breaks and energy, and positive effects via more inclusion and energy). The hypothesized direct and indirect effects involving detachment and relaxation were retained. This finding suggests the energy processes associated with different work locations extend beyond detachment and relaxation to other recovery experiences as well.

The surveys, data, and output from the main and sensitivity analyses are available via OSF:https://doi.org/10.17605/OSF.IO/N4Z5D.

Discussion

This daily diary study with hybrid workers revealed countervailing negative and positive impacts of working from work versus a remote location. On workdays spent primarily at an onsite location, workers feel more included in their workgroup. To the extent that they feel more included, then they end the workday feeling more energized and have better recovery experiences that evening. On workdays spent primarily at a remote location (i.e., like the home office or a café), workers take more breaks from work as needed. To the extent that they take more breaks as needed, then they end the day with more energy and attain better recovery experiences that evening. Interestingly, we observed no direct effects of work location on evening recovery experiences. Daily work location shapes evening recovery experiences only in so far as it shapes energy conserving or draining mechanisms.

Extensive sensitivity analyses further supported the unique contributions of these energy mechanisms for daily energy and recovery of hybrid workers. The hypothesized effects held even when considering other factors, like the nature of communication (i.e., face-to-face, virtual), daily work hours, workload, and work interruptions. Although days spent working remotely involve different modalities and temporality of work (i.e., less in-person and more virtual communication with co-workers; more distribution of break time and work hours; Lauring & Jonasson, 2025), even when accounting for this variance, our findings on the associations of work location with breaks, inclusion, and indirectly with energy and recovery, are robust. Also, although working from the onsite location brings about negative implications in the form of more work interruptions, the positive benefits of workgroup inclusion for energy and recovery remain. The hypothesized effects also held when accounting for an alternative operationalization of work breaks (i.e., time spent on work breaks) and mostly held when accounting for alternative operationalizations of autonomy (i.e., work control and control over work time or location). Overall, across a total of nine of these robustness checks involving alternative predictors and mechanisms, no structural paths were affected, and only three out of 36 possible changes to the indirect effects were evident. These changes involved weakened indirect effects associated with work breaks when alternative autonomy mechanisms were considered (i.e., work control and work location control). These small changes make sense, given the shared "autonomy" variance in these constructs.

Although the results of these analyses were encouraging, there was some nuance to further explore. Interestingly, even though having daily flexibility control over when and where one worked that day was not related to workgroup inclusion, it did facilitate taking more work breaks as needed, which also was indirectly beneficial for daily energy and recovery. Thus, having control over when and where one works also seems important for being able to take work breaks as needed that day, regardless of the actual location from which one works. This speaks to the importance of hybrid work arrangements that allow employees to exercise this day-level autonomy over their work location and hours. Another insight was that belongingness seems to be the more important aspect of inclusion for energy, because uniqueness, although also enabled by working from the work location, was not associated with end-of-workday energy. A final insight was that daily work location not only indirectly shapes evening relaxation and detachment, but also other recovery experiences, including autonomy/control, mastery, meaning, and affiliation (Sonnentag & Fritz, 2015; Newman et al., 2014). Thus, it seems that ending the workday with depleted energy likely interferes with a range of feelings, thoughts, and activities in the home domain, which inhibits the attainment of a broad range of recovery experiences.

Theoretical implications

This research contributes to both the energy/recovery and hybrid work literatures by integrating key perspectives from across theorizing on energy dynamics (Quinn et al., 2012), the recovery paradox (Sonnentag, 2018), workgroup inclusion (Shore et al., 2011), and the dual pathway model of remote work (Gajendran et al., 2024). Our study of daily variation in work location answers calls for more research on the dynamics of hybrid working (Lauring & Jonasson, 2025). Like others before us, we demonstrated the paradoxical nature of hybrid work (Lauring & Jonasson, 2025). There is a trade-off between *higher opportunities to take work breaks as needed (autonomy)* versus *lower opportunities to experience workgroup inclusion (isolation)* on days spent working remotely. Revealing these novel energy conserving (*autonomy* to take breaks) and energy draining (*isolation* from inclusion in one's workgroup) mechanisms of remote workdays furthers our understanding of the benefits and costs of hybrid working in several ways.

First, we demonstrate that being able to take work breaks as needed is enabled on days working remotely. Although ergonomics and psychosocial hazards research suggests this is the case (Cruz-Ausejo et al., 2023; Fauzi & de Lucca, 2022), day-level studies showing the day-to-day comparison for hybrid workers (i.e., one

location compared to another; Lauring & Jonasson, 2025) and the connections with daily energy shifts and evening recovery is lacking. Indeed, research on the linkages of inside of work recovery (i.e., energy management via work breaks) to outside of work recovery (i.e., evening recovery experiences) has received scant attention (Sonnentag et al., 2022). Only a few studies have explored how breaks during work help recovery after work (e.g., de Bloom et al., 2015; Demerouti et al., 2012). This is surprising, as the notion that employees can better regulate their energy when provided the autonomy to schedule their activities and breaks is a key assumption of the effort-recovery model (Meijman & Mulder, 1998). Furthermore, depleted energy is a theoretical mechanism of the recovery paradox (Sonnentag, 2018). Our research helps to illuminate the potential process by which daily energy management translates into evening recovery, via daily shifts in energy level. This process has been inferred or theorized (Meijman & Mulder, 1998; Sonnentag, 2018), but is rarely tested. Further research is needed to understand the specific intervening processes involved, so that exactly why depleted energy affects the attainment of recovery experiences is better understood. Such knowledge will help to inform how to disrupt this negative process once it begins.

Second, we expand the conceptualization of social isolation in hybrid work to a more specific construct, that being inclusion. Workgroup inclusion is an important aspect of social connection in work settings (Shore & Chung, 2024). Employees' sense of inclusion at work has been studied mostly as a between-person phenomena (Shore & Chung, 2024) and study of day-level variation is emerging (for recent examples: Li et al., 2022; Zhang et al., 2024). Our findings demonstrate that workgroup inclusion can shift day-to-day, and that these changes are shaped by being at the onsite location (or not). Going further, we also reveal important spillover consequences of daily inclusion for recovery experiences after work. Research on how the inclusionary dynamics of one's workgroup operate and spill over into non-work settings is limited. The sensitivity analyses suggest a role for belongingness, but not uniqueness, in this spillover process. Uniqueness is about feeling comfortable to diverge from others in the group and speak up, which although meaningful and a critical component of inclusion, may have neutral or even negative impacts on daily energy. Compared to uniqueness, belonging is more likely to offer cognitive and emotional nourishment that replenishes energy more directly.

Third, although our study highlights how work location is related to daily energy and recovery processes, it is important to note that some direct (i.e., related to energy) and indirect effects (i.e., related to recovery) were not significant between-persons. With these null findings at the between-persons level, our study mirrors non-significant impacts of remote work intensity on well-being outcomes as reported by Gajendran et al. (2024). Thus, our results suggest the energy and recovery implications of remote work become mainly evident at the day level, but not at the person level. This said, the benefit of working more frequently onsite for inclusion, and the benefit of more inclusion for energy, did emerge at the between-persons level. Although these findings suggest a more important role for inclusion as an energy mechanism of hybrid work, further research is needed to evaluate the potential for accumulation over time. Moreover, we note our study focused on hybrid workers with location flexibility, and thus, the contrast with workers who do not have such work arrangements is missing from the between-persons variance.

Limitations and future research directions

A key limitation was that all measures were self-reported (i.e., what employees say they do and experience each day). Future research using objective measures (i.e., office attendance data, physiological monitoring) is warranted. Although some measures were temporarily separated (i.e., from morning, to workday, to evening), and morning energy level was controlled for, the workday processes (i.e., location, work breaks, inclusion, energy) were assessed at once at the end-of-work survey. Thus, the collection of measures at the same time point limits conclusions about the causality inferred in our mediational model. Experimental designs would help to tease apart and establish the processes revealed here more robustly.

Another limitation is that we focused on one dimension of hybrid work, that being *where* work was done (i.e., the work location), but hybrid working also involves dynamic switches in other dimensions too, including *how* and *when* (i.e., modality and temporality; Lauring & Jonasson, 2025). Our sensitivity analyses do somewhat, but not entirely, speak to these other dimensions of hybrid working. Here, first, we note that, to a certain extent, *where* one works (i.e., remotely versus onsite) also shapes *how* and *when* they work that day, so there is considerable overlap among the dimensions as theorized (Lauring & Jonasson, 2025). Second, we note that even when variation in modes of communication and the distribution of work hours across the day were considered, the effects of work location for work breaks, energy, and recovery experiences remained robust. This said, future research could more specifically tease apart the dimensions of hybrid

work (i.e., the where, when, and how) and the dynamic switches between traditional and non-traditional modes of working, potentially even within the workday. Although days working onsite may include a mixture of different modalities and have more synchronicity, depending on whether co-workers are co-located that day or not; in contrast, days working remotely may be experienced less dynamically within the workday, as these days are likely to involve mostly virtual modalities, perhaps being also more asynchronous in their temporality.

Relatedly, another interesting possibility for future research is to consider variation in the types of tasks hybrid employees undertake across their different work locations. It is possible that hybrid workers, who have more work autonomy and flexibility, decide *where* to work to enable conducive conditions for *what* they plan to work on that day. Conversely, even when the work location is not the worker's choice on a given day, the constraints of different locations (e.g., equipment, noise, co-location of co-workers) could also shape what tasks workers choose to do, or are able to work on, that day. Although prior research suggests remote workdays might offer more freedom from interruptions and a chance for "deep working" (e.g., concentration; Toscano et al., 2025), the inherent nature of the different types of tasks typically performed across work locations is yet to be fully explored. Such insights could be important, as *what* hybrid workers work on may also have energy and recovery implications. Here, it will also be important to consider the extent to which hybrid workers do choose *where* to work for conditions conducive to optimal performance on certain tasks, or rather, if their choices are instead guided by other factors, like team coordination (Lauring & Jonasson, 2025) or family dynamics (Munnich et al., in press).

A further limitation is that we focused on taking any type of break as needed, and did not study the types of, or experiences garnered from, the work breaks taken. It is possible that, although employees can take less breaks overall while at an onsite location, they might be able to bolster the value of the breaks they can take (e.g., by taking more physical or social types of breaks; Sonnentag et al., 2022). Relatedly, there are likely important features of the home environment that need consideration. For instance, some aspects of working from home might make some types of breaks more likely and more beneficial (i.e., having access to green spaces or pets to play with). Conversely, other aspects may make breaks less likely and less beneficial (i.e., having children nearby or if break time is used for chores). Thus, future research looking into the nature of breaks across onsite and remote settings could be useful. Such insights may help to guide practical recommendations on what types of breaks are best suited to specific settings.

Similarly, we choose to focus on the attainment of important recovery experiences, with focus on detachment and relaxation, but other evening recovery behaviours (i.e., activities, crafting) would be worth considering in future research. Indeed, recent research has shown that activities like socializing, physical exercise, and/or going for a walk, which arguably require some energy to enact, are the most conducive for achieving psychological detachment and relaxation experiences (Alameer et al., 2023), but also are more difficult to enact when energy is depleted (Bakker et al., 2013). Moreover, it is important to consider that employees are not necessarily passive about their recovery needs, with new research identifying the importance of needs-based off-job crafting for recovery (Kujanpää et al., 2022; Tušl et al., 2024). Future research on actual recovery behaviours is important for revealing further insights into how to support hybrid worker well-being.

A final limitation is that we examined how one's usual workgroup made them feel more or less included as an individual experience, but other agents or levels of inclusion may be important (Shore & Chung, 2024). For example, inclusion from one's leader or others (i.e., co-workers from another department, clients or customers). Moreover, group-level inclusion, within and across teams, could be important to study in future, especially as it pertains to the consequences of hybrid work patterns for team collaboration and performance (Lauring & Jonasson, 2025). Future research on how leaders can enable more felt inclusion in hybrid workers, even on the days when workers work remotely, could be of particular importance. We also acknowledge our broad approach to the study of inclusion, where we consider that any worker can feel more or less included. However, the feeling of inclusion (or exclusion) may be more important for minoritized identities (i.e., women, people of colour, older adults, neurodivergent people). For example, Dhanani et al. (2024) demonstrated that compared to members of dominant social groups, employees with minoritized social identities tend to prefer remote work because it reduced the pressure to modify or suppress their identities and reduced negative interactions of discrimination and rejection. As such, remote work for these workers might be more about avoiding exposure to exclusion. Thus, future research is needed that considers how these day-level energy and recovery processes evolve for minoritized employees, to understand if they can still experience some of the inclusionary benefits of working onsite. Moreover, it would be useful to learn what features of the work environment (e.g., culture, climate, leadership)

can bring about more inclusion for them on days spent onsite, but also, when working remotely.

Practical implications and conclusions

On a daily basis, although there are energy-related benefits that come with being in the workplace and feeling more included, there are also energy-related benefits that come with working remotely and being free to take more work breaks as needed. Conversely, days spent remotely cost energy via less inclusion, and days spent onsite cost energy via less work breaks. Thus, when deciding whether to work onsite or remotely on a given day, for hybrid workers there can be an energy trade-off. In this way, and in line with current thinking, our findings reinforce the paradoxical nature of hybrid work (Gajendran et al., 2024; Lauring & Jonasson, 2025). Employees and employers alike should consider these advantages and drawbacks of hybrid work when planning work schedules and hybrid work strategies by balancing employee needs for autonomy and connection (Allen et al., 2024; Dowling et al., 2022). Providing employees with the flexibility to work across different spaces allows them more opportunities to manage their daily energy, which has consequences for their evening recovery. We suggest that organizations offer hybrid work options to their workforce, but in doing so implement strategies to address the energy-related deficits of each location.

More specifically, it is recommended that organizations consider the broader design of their hybrid work arrangements. For example, by encouraging regular "in office" days as part of a work pattern to facilitate more opportunity for genuine connection and thus felt inclusion. Nevertheless, we also recognize the importance of employee autonomy over flexible work arrangements, including work location. This seems particularly important for the autonomy to take breaks as needed, which was more likely on days working remotely, but also more likely on days when the employee could choose their location. In relation to addressing the energy-related decifits of each location, one possibility is that employers provide support for taking breaks as needed when onsite (e.g., via interventions to address the break climate: Kim et al., 2022). Another possibility is to design more deliberate virtual practices that foster informal connection, ensuring remote workers are actively included in team interactions. Moreover, training for managers to recognize and respond to subtle inclusion deficits that may arise when employees are not co-located. Thus, in designing hybrid work, there is a need to balance the aim of creating opportunities for more connection against the need to protect individual autonomy, as both are important for energy and subsequent recovery.

In addition, our findings reinforce growing concerns that hybrid work arrangements, while offering flexibility, also unintentionally undermine inclusion efforts within organizations. Although remote work has the potential to create psychologically safer environments for some (Dhanani et al., 2024), our daily diary data highlight that the physical work environment, which likely enables both more planned and spontaneous in-person interaction, still plays a key role in shaping workers' felt inclusion on a daily basis. Nevertheless, we also found that more communication, both in-person and virtual, was associated with more felt inclusion, so even virtual communication can contribute to felt inclusion, albeit to a lesser extent. Thus, organizations could rethink inclusion strategies to ensure they are not overly reliant on in-person presence to cultivate inclusion. Without such efforts, hybrid work may replicate rather than redress patterns of exclusion, particularly if the benefits of inclusion are only accessible to those who are regularly onsite.

Conclusion

Our research highlights that hybrid work offers the best of both worlds when it comes to daily energy and recovery. Although the onsite location offers opportunity for employees to feel included and thus energized, the advantage of days spent working remotely is more opportunity to manage energy through work breaks. Thus, hybrid work, which involves daily switches between onsite and remote locations, provides both the benefits of working at an onsite location and the benefits of working remotely. Revealing these daily energy dynamics of hybrid work is important, as depleted energy and poor recovery can erode employee well-being. While our study offers first insights into the energy and recovery implications of daily variation in work location, more research is needed to understand the consequences of hybrid work for employee well-being, including over the longer-term.

Acknowledgements

The authors thank Ella Gilbert, Debbie Thurlow, Chloe Carpenter, Jenny Wang, and Lisa Blockx, students on the project who supported participant recruitment. We also thank Paul Jackson for his support developing the program used for data collection.

Authors'contributions statement

SP: Conceptualization; Data curation; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Resources; Software; Supervision; Validation; Visualization; Writing (original draft); Writing (reviewing and editing).

ND: Data curation; Formal analysis; Methodology; Investigation; Software; Visualization; Writing (original draft); Writing (reviewing and editing).

CK: Formal analysis; Investigation; Visualization; Writing (original draft); Writing (reviewing and editing).

SS: Conceptualization; Funding acquisition; Methodology; Writing (reviewing and editing).

AN: Conceptualization; Funding acquisition; Methodology; Writing (reviewing and editing).

NJ: Conceptualization; Funding acquisition; Methodology; Writing (reviewing and editing).

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

Sources: Research was supported by an Australian Research Council Discovery Project [DP210101934] awarded to the first, fourth, fifth, and sixth authors.

ORCID

Stacey L. Parker http://orcid.org/0000-0002-6399-3359
Niamh Dawson http://orcid.org/0000-0002-8369-3185
Charlotte Keenan http://orcid.org/0000-0002-8158-0769
Sabine Sonnentag http://orcid.org/0000-0002-9464-4653
Andrew Neal http://orcid.org/0000-0002-5344-9376
Nerina L. Jimmieson http://orcid.org/0000-0003-4901-7949

Ethics, data, and transparency

Ethics approval for the study was obtained from the first author's institution (#2023/HE000290). Consent was informed and voluntary. Materials, data, and code are available via the Open Science Framework [https://doi.org/10.17605/OSF.IO/N4Z5D]. The study design and analyses were not preregistered. The data are not reported elsewhere and not under consideration elsewhere.

References

Agolli, A., & Holtz, B. C. (2023). Facilitating detachment from work: A systematic review, evidence-based recommendations, and guide for future research. *Journal of Occupational Health Psychology*, *28*(3), 129–159. https://doi.org/10.1037/ocp0000353

Aksoy, C. G., Barrero, J. M., Bloom, N., Davis, S. J., Dolls, M., & Zarate, P. (2022). *Working from home around the world* (no. w30446). *National Bureau of Economic Research*. https://doi.org/10.3386/w30446

Alameer, K. M., Uitdewilligen, S., & Hülsheger, U. R. (2023). What are the active ingredients in recovery activities? Introducing a dimensional approach. *Journal of Occupational Health Psychology*, *28*(4), 239–262. https://doi.org/10.1037/ocp0000354

Albulescu, P., Macsinga, I., Rusu, A., Sulea, C., Bodnaru, A., & Tulbure, B. T. (2022). "Give me a break!" a systematic review and meta-analysis on the efficacy of micro-breaks for increasing well-being and performance. *PLOS ONE*, *17*(8), e0272460. https://doi.org/10.1371/journal.pone.0272460

Allen, K. S., Grelle, D., Lazarus, E. M., Popp, E., & Gutierrez, S. L. (2024). Hybrid is here to stay: Critical behaviors for success in the new world of work. *Personality and Individual Differences*, *217*, 1–12. https://doi.org/10.1016/j.paid.2023.112459

Bakker, A. B., Demerouti, E., Oerlemans, W., & Sonnentag, S. (2013). Workaholism and daily recovery: A day reconstruction study of leisure activities. *Journal of Organizational Behavior*, *34*(1), 87–107. https://doi.org/10.1002/job.1796

Beckel, J. L., & Fisher, G. G. (2022). Telework and worker health and well-being: A review and recommendations for research and practice. *International Journal of Environmental Research and Public Health*, *19*(7), 3879. https://doi.org/10.3390/ijerph19073879

Becker, T. E., Atinc, G., Breaugh, J. A., Carlson, K. D., Edwards, J. R., & Spector, P. E. (2016). Statistical control in correlational studies: 10 essential recommendations for organizational researchers. *Journal of Organizational Behavior*, *37*(2), 157–167. https://doi.org/10.1002/job.2053

Blasche, G., Pasalic, S., Bauböck, V. M., Haluza, D., & Schoberberger, R. (2017). Effects of rest-break intention on rest-break frequency and work-related fatigue. *Human Factors: The Journal of the Human Factors and Ergonomics Society*, *59*(2), 289–298. https://doi.org/10.1177/0018720816671605

Brosschot, J. F., Gerin, W., & Thayer, J. F. (2006). The perseverative cognition hypothesis: A review of worry, prolonged stress-related physiological activation, and health. *Journal of Psychosomatic Research*, *60*(2), 113–124. https://doi.org/10.1016/j.jpsychores.2005.06.074

Cangiano, F., Parker, S. K., & Ouyang, K. (2021). Too proactive to switch off: When taking charge drains resources and impairs detachment. *Journal of Occupational Health Psychology*, *26*(2), 142–154. https://doi.org/10.1037/ocp0000265

Chung, B. G., Ehrhart, K. H., Shore, L. M., Randel, A. E., Dean, M. A., & Kedharnath, U. (2020). Work group inclusion: Test of a scale and model. *Group & Organization Management*, *45*(1), 75–102. https://doi.org/10.1177/1059601119839858

Colbert, A. E., Bono, J. E., & Purvanova, R. K. (2016). Flourishing via workplace relationships: Moving beyond instrumental support. *Academy of Management Journal*, *59*(4), 1199–1223. https://doi.org/10.5465/amj.2014.0506

Cousins, R., MacKay, C. J., Clarke, S. D., Kelly, C., Kelly, P. J., & McCaig, R. H. (2004). "Management standards" work-related stress in the UK: Practical development. *Work and Stress*, *18*(2), 113–136. https://doi.org/10.1080/02678370410001734322

Cropley, M., Weidenstedt, L., Leick, B., & Sütterlin, S. (2023). Working from home during lockdown: The association between rest breaks and well-being. *Ergonomics*, *66*(4), 443–453. https://doi.org/10.1080/00140139.2022.2095038

Cruz-Ausejo, L., Copez-Lonzoy, A., Vilela-Estrada, A. L., Valverde, J. J., Bohórquez, M., & Moscoso-Porras, M. (2023). Can working at home be a hazard? Ergonomic factors associated with musculoskeletal disorders among teleworkers during the COVID-19 pandemic: A scoping review. *International Journal of Occupational Safety and Ergonomics*, *29*(4), 1335–1344. https://doi.org/10.1080/10803548.2022.2127246

de Bloom, J., Kinnunen, U., & Korpela, K. (2015). Recovery processes during and after work: Associations with health, work engagement, and job performance. *Journal of Occupational and Environmental Medicine*, *57*(7), 732–742. https://doi.org/10.1097/JOM.0000000000000475

Delanoeije, J., & Verbruggen, M. (2020). Between-person and within-person effects of telework: A quasi-field experiment. *European Journal of Work and Organizational Psychology*, *29*(6), 795–808. https://doi.org/10.1080/1359432X.2020.1774557

Demerouti, E., Bakker, A. B., Sonnentag, S., & Fullagar, C. J. (2012). Work-related flow and energy at work and at home: A study on the role of daily recovery. *Journal of Organizational Behavior*, *33*(2), 276–295. https://doi.org/10.1002/job.760

Dhanani, L. Y., Sultan, M., Pham, C. T., Mikami, K., Charles, D. R., & Crandell, H. A. (2024). Inclusion near and far: A qualitative investigation of inclusive organizational behavior across work modalities and social identities. *Journal of Organizational Behavior*, *45*(9), 1413–1430. https://doi.org/10.1002/job.2779

Dowling, B., Goldstein, D., Park, M., & Price, H. (2022). Hybrid work: Making it fit with your diversity, equity, and inclusion strategy. *The McKinsey Quarterly*, *4*, 1–9. https://www.mckinsey.com/capabilities/people-and-organizational-performance/our-insights/hybrid-work-making-it-fit-with-your-diversity-equity-and-inclusion-strategy

Fauzi, E. K. L., & de Lucca, S. R. (2022). Telework conditions, ergonomic and psychosocial risks, and musculoskeletal problems in the COVID-19 pandemic. *Journal of Occupational and Environmental Medicine*, *64*(12), e811–e817. https://doi.org/10.1097/JOM.0000000000002704

Gajendran, R. S., & Harrison, D. A. (2007). The good, the bad, and the unknown about telecommuting: A meta-analysis of the psychological mediators and individual consequences. *Journal of Applied Psychology*, *92*(6), 1524–1541. https://doi.org/10.1037/0021-9010.92.6.1524

Gajendran, R. S., Ponnapalli, A. R., Wang, C., & Javalagi, A. A. (2024). A dual pathway model of remote work intensity: A meta-analysis of its simultaneous positive and negative effects. *Personnel Psychology*, *77*(4), 1351–1386. https://doi.org/10.1111/peps.12641

Grillon, C., Quispe-Escudero, D., Mathur, A., & Ernst, M. (2015). Mental fatigue impairs emotion regulation. *Emotion*, *15*(3), 383–389. https://doi.org/10.1037/emo0000058

Hahn, V., Binnewies, C., & Haun, S. (2012). The role of partners for employees' recovery during the weekend. *Journal of Vocational Behavior*, *80*(2), 288–298. https://doi.org/10.1016/j.jvb.2011.12.004

Headrick, L., Newman, D. A., Park, Y. A., & Liang, Y. (2023). Recovery experiences for work and health outcomes: A meta-analysis and recovery-engagement-exhaustion model. *Journal of Business and Psychology*, *38*(4), 821–864. https://doi.org/10.1007/s10869-022-09821-3

Hill, S. N., Kang, J. H., & Seo, M. (2014). The interactive effect of leader-member exchange and electronic communication on employee psychological empowerment and work outcomes. *The Leadership Quarterly*, *25*(4), 772–783. https://doi.org/10.1016/j.leaqua.2014.04.006

Hinds, P. J., & Bailey, D. E. (2003). Out of sight, out of sync: Understanding conflict in distributed teams. *Organization Science*, *14*(6), 615–632. https://doi.org/10.1287/orsc.14.6.615.24872

Hofmann, W., Schmeichel, B. J., & Baddeley, A. D. (2012). Executive functions and self-regulation. *Trends in Cognitive Sciences*, *16*(3), 174–180. https://doi.org/10.1016/j.tics.2012.01.006

Humphrey, N. M., DeHart-Davis, L., Hassan, S., Hatmaker, D. M., & Smith, A. (2024). Does workplace inclusion mitigate emotional exhaustion? Evidence from local government organizations. *Public Management Review*, *27*(12), 1–29. https://doi.org/10.1080/14719037.2024.2393627

Ilies, R., Aw, S. S. Y., & Pluut, H. (2015). Intraindividual models of employee well-being: What have we learned and where do we go from here. *European Journal of Work and Organizational Psychology*, *24*(6), 827–838. https://doi.org/10.1080/1359432X.2015.1071422

Iqbal, Q., Volpone, S. D., & Piwowar-Sulej, K. (2025). Workforce neurodiversity and workplace avoidance behavior: The role of inclusive leadership, relational energy, and self-control demands. *Human Resource Management*, *64*(1), 37–57. https://doi.org/10.1002/hrm.22249

Iser-Potempa, J., Nesher Shoshan, H., & Sonnentag, S. (2024). Investigating daily abusive supervision as antecedent of subordinates' low psychological detachment and relaxation during nonwork time: A diary study. *Journal of Occupational Health Psychology*, *29*(4), 220–237. https://doi.org/10.1037/ocp0000377

Kim, S., Cho, S., & Park, Y. (2022). Daily microbreaks in a self-regulatory resources lens: Perceived health climate as a contextual moderator via microbreak autonomy. *Journal of Applied Psychology*, *107*(1), 60–77. https://doi.org/10.1037/apl0000891

Kim, S., Park, Y., & Headrick, L. (2018). Daily micro-breaks and job performance: General work engagement as a cross-level moderator. *Journal of Applied Psychology*, *103*(7), 772–786. https://doi.org/10.1037/apl0000308

Kubicek, B., Baumgartner, V., Prem, R., Sonnentag, S., & Korunka, C. (2022). Less detachment but more cognitive flexibility? A diary study on outcomes of cognitive demands of flexible work. *International Journal of Stress Management*, *29*(1), 75–87. https://doi.org/10.1037/str0000239

Kujanpää, M., Syrek, C., Tay, L., Kinnunen, U., Mäkikangas, A., Shimazu, A., Wiese, C. W., Brauchli, R., Bauer, G. F., Kerksieck, P., Toyama, H., & de Bloom, J. (2022). Needs-based off-job crafting across different life domains and contexts: Testing a novel conceptual and measurement approach. *Frontiers in Psychology*, *13*, 959296. https://doi.org/10.3389/fpsyg.2022.959296

Lauring, J., & Jonasson, C. (2025). What is hybrid work? Towards greater conceptual clarity of a common term and understanding its consequences. *Human Resource Management Review*, *35*(1), 1–22. https://doi.org/10.1016/j.hrmr.2024.101044

Leary, M. R., & Downs, D. L. (1995). Interpersonal functions of the self-esteem motive. In M. H. Kernis (Ed.), *Efficacy, agency,*

and self-esteem (pp. 123–144). Springer US. https://doi.org/10.1007/978-1-4899-1280-0_7

Li, Y., Kleshinksi, C. E., Wilson, K. S., & Zhang, K. (2022). Age differences in affective responses to inclusion experience: A daily diary study. *Personnel Psychology*, *75*(4), 805–832. https://doi.org/10.1111/peps.12484

Lian, H., Yam, K. C., Ferris, D. L., & Brown, D. (2017). Self-control at work. *The Academy of Management Annals*, *11*(2), 703–732. https://doi.org/10.5465/annals.2015.0126

Lyubykh, Z., Gulseren, D., Premji, Z., Wingate, T. G., Deng, C., Belanger, L. J., & Turner, N. (2022). Role of work breaks in well-being and performance: A systematic review and future research agenda. *Journal of Occupational Health Psychology*, *27*(5), 470–487. https://doi.org/10.1037/ocp0000337

McPhail, R., Chan, X. W., May, R., & Wilkinson, A. (2023). Post-COVID remote working and its impact on people, productivity, and the planet: An exploratory scoping review. *The International Journal of Human Resource Management*, *35*(1), 154–182. https://doi.org/10.1080/09585192.2023.2221385

Meijman, T. F., & Mulder, G. (1998). Psychological aspects of workload. In P. J. D. Drenth & H. Thierry (Eds.), *Handbook of work and organizational psychology* (Vol. 2, pp. 5–33). Psychology Press.

Mellner, C., Kecklund, G., Kompier, M., Sariaslan, A., & Aronsson, G. (2016). Boundaryless work, psychological detachment and sleep: Does working 'anytime - anywhere' equal employees are 'always on'? In *New ways of working practices (Advanced series in management, vol. 16* (pp. 29–47). Emerald. https://doi.org/10.1108/S1877-636120160000016003

Merlini, K. P., Moon, N. A., McKenzie-James, A. A., Caylor, J. R., Redmond, A., Nguyen, D., & Richardson, P. (2025). An unmet goal? A scale development and model test of the role of inclusive leadership. *Journal of Business and Psychology*, *40* (2), 333–357. https://doi.org/10.1007/s10869-024-09955-6

Morganson, V. J., Major, D. A., Oborn, K. L., Verive, J. M., & Heelan, M. P. (2010). Comparing telework locations and traditional work arrangements: Differences in work-life balance support, job satisfaction, and inclusion. *Journal of Managerial Psychology*, *25*(6), 578–595. https://doi.org/10.1108/02683941011056941

Morrison-Smith, S., & Ruiz, J. (2020). Challenges and barriers in virtual teams: A literature review. *SN Applied Sciences*, *2*(6), 1096. https://doi.org/10.1007/s42452-020-2801-5

Munnich, A., Kleingeld, A., Weijschede, J., & Danivska, V. (in press). Exploring hybrid-working preferences of knowledge workers using a stated choice experiment. *Journal of Managerial Psychology*. https://doi.org/10.1108/JMP-04-2024-0227

Newman, D. B., Tay, L., & Diener, E. (2014). Leisure and subjective well-being: A model of psychological mechanisms as mediating factors. *Journal of Happiness Studies*, *15*(3), 555–578. https://doi.org/10.1007/s10902-013-9435-x

Pensar, H., & Mäkelä, L. (2023). Roads to recovery in remote working. Exploration of the perceptions of energy-consuming elements of remote work and self-promoted strategies toward psychological detachment. *Employee Relations: The International Journal*, *45*(7), 140–161. https://doi.org/10.1108/ER-09-2022-0431

Preacher, K. J., Zyphur, M. J., & Zhang, Z. (2010). A general multilevel SEM framework for assessing multilevel mediation. *Psychological Methods*, *15*(3), 209–233. https://doi.org/10.1037/a0020141

Quinn, R. W., Spreitzer, G. M., & Fu Lam, C. (2012). Building a sustainable model of human energy in organizations: Exploring the critical role of resources. *Academy of Management Annals*, *6*(1), 337–396. https://doi.org/10.5465/19416520.2012.676762

Randel, A. E. (2025). Inclusion in the workplace: A review and research agenda. *Group & Organization Management*, *50*(1), 119–162. https://doi.org/10.1177/10596011231175578

Reis, H. T., Collins, W. A., & Berscheid, E. (2000). The relationship context of human behavior and development. *Psychological Bulletin*, *126*(6), 844–872. https://doi.org/10.1037/0033-2909.126.6.844

Schertler, M., Glumann, N. V., & Boehm, S. A. (2024). How two megatrends affect each other: Studying the interplay of remote work and workplace inclusion with a random intercept cross-lagged panel model. *Academy of Management Discoveries*, *10*(3), 351–374. https://doi.org/10.5465/amd.2022.0133

Shao, Y., Fang, Y., Wang, M., Chang, C. H. D., & Wang, L. (2021). Making daily decisions to work from home or to work in the office: The impacts of daily work- and COVID-related stressors on next-day work location. *Journal of Applied Psychology*, *106*(6), 825–838. https://doi.org/10.1037/apl0000929

Shore, L. M., & Chung, B. G. (2024). Inclusion as a multi-level concept. *Current Opinion in Psychology*, *60*, 101910. https://doi.org/10.1016/j.copsyc.2024.101910

Shore, L. M., Randel, A. E., Chung, B. G., Dean, M. A., Holcombe Ehrhart, K., & Singh, G. (2011). Inclusion and diversity in work groups: A review and model for future research. *Journal of Management*, *37*(4), 1262–1289. https://doi.org/10.1177/0149206310385943

Sonnentag, S. (2018). The recovery paradox: Portraying the complex interplay between job stressors, lack of recovery, and poor well-being. *Research in Organizational Behavior*, *38*, 169–185. https://doi.org/10.1016/j.riob.2018.11.002

Sonnentag, S., Cheng, B. H., & Parker, S. L. (2022). Recovery from work: Advancing the field toward the future. *Annual Review of Organizational Psychology and Organizational Behavior*, *9* (1), 33–60. https://doi.org/10.1146/annurev-orgpsych-012420-091355

Sonnentag, S., & Fritz, C. (2007). The recovery experience questionnaire: Development and validation of a measure for assessing recuperation and unwinding from work. *Journal of Occupational Health Psychology*, *12*(3), 204–221. https://doi.org/10.1037/1076-8998.12.3.204

Sonnentag, S., & Fritz, C. (2015). Recovery from job stress: The stressor-detachment model as an integrative framework. *Journal of Organizational Behavior*, *36*(Suppl 1), S72–S103. https://doi.org/10.1002/job.1924

Spector, P. E., & Jex, S. M. (1998). Development of four self-report measures of job stressors and strain: Interpersonal conflict at work scale, organizational constraints scale, quantitative workload inventory, and physical symptoms inventory. *Journal of Occupational Health Psychology*, *3*(4), 356–367. https://doi.org/10.1037//1076-8998.3.4.356

Steed, L. B., Swider, B. W., Keem, S., & Liu, J. T. (2021). Leaving work at work: A meta-analysis on employee recovery from work. *Journal of Management*, *47*(4), 867–897. https://doi.org/10.1177/0149206319864153

Toscano, F., Gonzalez-Roma, V., & Zappala, S. (2025). The influence of working from home vs. working at the office on job performance in a hybrid work arrangement: A diary study. *Journal of Business and Psychology*, *40*(2), 497–512. https://doi.org/10.1007/s10869-024-09970-7

Trougakos, J. P., & Hideg, I. (2009). Momentary work recovery: The role of within-day work breaks. In P. Perrewé, D. C. Ganster, & S. Sonnentag (Eds.), *Research in occupational stress and well-being* (pp. 37–84). Emerald.

Tušl, M., Bauer, G. F., Kujanpää, M., Toyama, H., Shimazu, A., & De Bloom, J. (2024). Needs-based job crafting: Validation of a new scale based on psychological needs. *Journal of Occupational Health Psychology*, *29*(2), 57–71. https://doi.org/10.1037/ocp0000372

Venz, L., Wöhrmann, A., Vieten, L., & Michel, A. (2024). Recovery from work stress. In M. C. W. Peeters, J. D. Jonge, & T. Taris (Eds.), *An introduction to contemporary work psychology* (second ed. pp. 321–340). Wiley-Blackwell.

Versteegen, P. L., & Adams, B. G. (2025). More than just belonging? Uniqueness' role in inclusion experiences. *Group Processes & Intergroup Relations*, *28*(5), 1054–1075. https://doi.org/10.1177/13684302241312675

Virtanen, A., Van Laethem, M., de Bloom, J., & Kinnunen, U. (2021). Drammatic breaks: Break recovery experiences as mediators between job demands and affect in the afternoon and evening. *Stress and Health*, *37*(4), 801–818. https://doi.org/10.1002/smi.3041

Weigelt, O., Gierer, P., Prem, R., Fellmann, M., Lambusch, F., Siestrup, K., Blume, J., Franke, T., Tsantidis, S., Golla, M., Wyss, C., & Blume, J. (2022). Time to recharge batteries - development and validation of a pictorial scale of human energy. *European Journal of Work and Organizational Psychology*, *31*(5), 781–798. https://doi.org/10.1080/1359432X.2022.2050218

Wilkes, S. M., Barber, L. K., & Rogers, A. P. (2018). Development and validation of the workplace interruptions measure. *Stress and Health*, *34*(1), 102–114. https://doi.org/10.1002/smi.2765

Xanthopoulou, D., Bakker, A. B., Oerlemans, W. G. M., & Koszucka, M. (2018). Need for recovery after emotional labor: Differential effects of daily deep and surface acting. *Journal of Organizational Behavior*, *39*(4), 481–494. https://doi.org/10.1002/job.2245

Zacher, H., Brailsford, H. A., & Parker, S. L. (2014). Micro-breaks matter: A diary study on the effects of energy management strategies on occupational well-being. *Journal of Vocational Behavior*, *85*(3), 287–297. https://doi.org/10.1016/j.jvb.2014.08.005

Zhang, K., Li, Y., Yin, K., & Kleshinski, C. E. (2024). Perceived leader inclusion and employee work-to-family conflict: A daily diary study. *Journal of Managerial Psychology*, *39*(8), 1030–1045. https://doi.org/10.1108/JMP-07-2023-0421