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Editorial for ISJ special issue - The new wave of 'hybrid work': An opportunity to revise assumptions and build theory

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1. Introduction

The motivation for this special issue lies in the recent resurgence of interest in and the accelerated adoption of hybrid work practices against the backdrop of the COVID-19 pandemic.

As a result of enforced lockdown policies, hybrid work emerged as a 'new form of work', whereby work arrangements began integrating physical workspace and time with their virtual counterparts to maintain business continuity. Hybrid work can be understood as a form of work that blends traditional office-based work with remotely located alternatives (Gratton, 2021). Earlier work on hybridity in the workplace conceptualised hybridity as a combining three kinds of space: physical office-based space, home-based domestic space, and virtual online cyberspace (Halford, 2005). The dynamics of the social relations and spatial arrangements that co-exist and co-evolve in such spaces have been variously explored in the literature, especially in homeworking and teleworking (Baruch, 2001; Felstead & Jewson, 2000; Gurstein, 2001).

However, the unique situations that such a confluence affords, e.g. forms of work that simultaneously accommodate and shape these new organisational spaces, have not yet been explored. Indeed, recent practices, particularly during and after the COVID-19 pandemic, indicated that it is not merely the spatial dimension that bears significance over where and how hybrid work is undertaken and organised, but that the temporal dimension is crucially important as well (Gratton, 2021). Further, recent scholarship indicates that hybrid work goes beyond the confluence of space and time, but rather fuses these dimensions together to create new workspaces (Chamakiotis et al., 2023).

New forms of work are seen to offer perspectives on the temporo-spatial re-organisation of work and have tended to foreground mostly social and organisational processes involved in these work modalities, e.g. work/life balance, the dissolution of boundaries between the personal and the professional, expanding of working time, invasion of personal space by the domination of work activities (Ellison, 2004; Nansen et al., 2010; Wapshott & Mallett, 2012). According to de Vaujanay et al. (2021), however, these temporo-spatial perspectives have fundamentally changed the nature of work, "*We just share some*

frontiers and liminalities in the new worlds of work. We cross them but we do not occupy them any more. Digitality is the very large enabler and mediation of these dyschronies. And the Covid-19 crisis has made more visible and more present this process of 'liminalization'. Work is not a grounded time-space unity any more, a heavy production tool or IT artefacts. It is an ephemeral and precarious connective activity that can take place everywhere, every time. A mnesic trace potentially meaningful and subject of surveillance processes fed by ourselves. Most of all, it is not fully 'work' any more" (p. 688).

Along these lines, hybrid work is seen as a "third way" of working, where physical presence and synchronicity are negotiable; new ways of making those who are absent present and synchronising schedules to suit need to be re-configured (Jacobs, 2021). Some of the present thinking focuses on redesigning office space for collaboration, communal working and socialising and home-based space for thinking, working productively and focusing on tasks (Microsoft, 2021). Technology is meant to provide support for these re-configurations, by, for example, "enabl[ing] homeworkers to drop in on casual conversations in informal meeting areas by having a videoconferencing camera streaming a kitchen area" (Jacobs, 2021).

Traditionally, research on remote work has tended to 'black box' the role played by digital technologies, acknowledging them to be agents of change (Messenger & Gschwind, 2016), or enablers of virtuality (Panteli et al., 2019), but not exploring in any depth the nature and extent of the relationship between the technology and these ways of working (Richardson, 2021), whereby these become increasingly entangled.

Against this background, the call for papers for this Special Issue aimed at inviting novel theorisations and conceptualisations of IS that can reorient our thinking in terms of the intertwined organisational-level and individual-level impacts of hybrid work arrangements and which can further function as analytical tools for the processes and mechanisms through which IS both enable and constrain hybrid work arrangements. We also wished to revisit existing debates around the interconnected themes of time, space, work, and technology, to create a new space for exploring in more depth how digital technologies and hybrid working are mutually shaping and influencing each other in moulding these new work modalities. Picking up on the spatiotemporal themes from organisational theorists studying these topics (e.g., Aroles et al., 2019; de Vaujany et al., 2021), we explore the re-spatialisation and re-temporalisation of hybrid work being engendered through digital technologies and we present these two theoretically relevant areas of focus as the basis for further research in hybrid work.

2. Space, spatialisation, and respatialisation of work

Space is understood to be dynamic, dialectical, and full of meanings (Lefebvre, 1991). It is not absolute and cannot be independent of social practices. For example, the very same space is perceived and conceived differently by different groups of people (e.g. women/men, adults/children, minority ethnic groups); therefore, it is not possible to assign a single and objective meaning to a space. In this context, space is regarded as a (social) product (Lefebvre, 1991) which is constructed out of the social relations (Massey, 1995). While specific social practices can result in a specific organisation of space, the latter can define relationships between people, activities, things, and concepts within it.

Spatialisation is defined as a process of constructing and creating a space in which social activities and relationships are embodied (Dobritsyna, 2019) and Lefebvre (1991) argues that spatialisation encompasses the dialectical relationship between material spatial practices, representation of space, and space of representation. Material spatial practices (experienced) refer to the spatial movement of physical and material flows to assure (commodity) production and social production. Representation of space (perceived) consists of signs and significations, codes and knowledge that enable the material practices to be 'talked about' and described either in everyday common sense and layman's terms or in special jargon used by experts. Space of representation (conceived) refers to the imagination of new meanings or possibilities for spatial practices. Production of space signals the dialectical relationships between these practices.

Hybrid work involves at least three spaces: public, private (or remote), and virtual (Halford, 2005). Public space refers to centralised office; private space refers to one's personal work environment; and virtual space refers to computer-generated cyberspace. In the context of hybrid work, the office is valued as a performative space where socialisation and office activities take place and formal working rhythms are defined; virtual space is valued as a space where signs, symbols, images, and discourses are produced and exchanged. The hybrid workspace is an integrative space which fuses public, private, and virtual spaces into one entity to enable frictionless spatial movement of people, activities, and material flows. As such, hybrid work entails the respatialisation of traditional workplaces and domestic spaces (Halford, 2005). The respatialisation of domestic spaces essentially requires hybrid workers and co-residents in the same household to re-examine their experience, perception, and conception of 'home', and subsequently to re-configure the spatial organisation of the household. Spatial arrangements, social relations and social practices within households are transformed because of the introduction of economic activities previously performed in the public domain into the private space. At the same time, the traditional workplace is also respatialised because hybrid work requires both workers and employers to re-examine their experience, perception, and conception of office spaces to construct a new workspace that reflects the new hybrid work arrangements and embodies new social practices.

3. Time, temporalisation, and re-temporalisation

"[T]he question of time remains open, riddled with paradox and infinitely arguable" (Grant et al., 2015, p. 3). Indeed, there are multiple and diverse conceptualisations of time, that range from exclusively objectivist approaches to entirely subjective theorisations, and studies tend to adopt different perspectives, depending on the investigated phenomenon, the disciplinary positioning as well as ontological concerns. Focusing exclusively on work-related studies, the question of time has been examined through the impact and nature of travel time (e.g., time spent on commuting) (Bonsall & Shires, 2006), through the temporal displacement of start/finish work time (Lyons & Haddad, 2008), and through practice-based perspectives that focus on what workers do while at work (Im et al., 2005). Several of these studies have specifically explored and drawn attention to technologies and systems as temporal structures that influence personal/professional boundaries and organise the rhythm and cycles of work practices (Lee & Liebenau, 2000; Oborn & Barrett, 2021; Orlikowski & Yates, 2002).

If time is to be broadly understood as the "sociocultural time of multiple dimensions (sequencing, timing, past-present-future relations, etc.)" (Munn, 1992, p. 116), then workers must be exposed to the entire spectrum of these dimensions as well as the realities experienced in their practice, as they become entangled in polychronicities (Ettema & Verschuren, 2007), and liminal spaces (Chamakiotis et al., 2023; Dorow & Jean, 2021), and where time takes both subjective and objective forms (Holt & Johnsen, 2019). Indeed, earlier studies have argued for understanding time and temporality as having a dual nature (Johnsen et al., 2019), a notion particularly prevalent in Bourdieu's writings and Theunissen's existentialist perspective of time. In detail, while Bourdieu has not directly theorised around time, his work suggests that the present is understood and experienced through interconnected events, but also as being independent of these, where time proceeds externally to them (Adkins, 2011). In this sense, "the future is always already present in the immediate present because agents are ordinarily immersed in the forthcoming or, more precisely, agents practically and pre-reflexively anticipate the forthcoming as a routine part of action" (Adkins, 2011, p. 352). In a similar vein, for Theunissen, the future is always expected and the way we experience and understand it depends on what or how the future could be based on our past and present (Theunissen, 1986).

Bringing the above within the context of work, and hybrid work in particular, scholars have argued that research needs to explore alternative theorisations of time and the re-temporalisation of work practices (Kunisch et al., 2021). de Vaujany et al. (2021), for example, suggest that work is organised and experienced along the continuum of time and that because of this, we need to pay attention to the multiple, shared, individual and conflicting temporalities, and how these might be influencing and shaping paradoxical relationships between workers and the organisation as far as autonomy, power and control are concerned. Indeed, it is not merely about identifying relevant measures of performance

management and productivity as workers move further away from the physical boundaries of the organisation, but also addressing questions that relate to how workers experience multiple temporalities, for example when they have to organise working from home for some days of the week, and where other responsibilities, such as caring for others, impose themselves on to the worker, requiring attention and often being in conflict with work requirements (Hubers et al., 2018). While some temporal events may be urgent, others may be seen as susceptible to rescheduling or postponement. Occasionally the ability to temporally fragment larger activities across the working week can support flexibility, especially if/when workers can alternate work with personal matters (Hubers et al., 2018). Equally, however, this may result in 'dead' times, whereby workers remain idle, waiting for something to happen on the other end of an organisational process, as well as potential intersectional impacts (Burchell et al., 2021), as caring responsibilities (e.g., school runs), which are often gendered, are rigid (Dijst, 2004).

4. Existing scholarship on how technology is implicated in the re-spatialisation and re-temporalisation of work

In attempting to understand the nature of the relationship between digital technologies and the spatiotemporal configuration of new work practices, work on new work modalities (mostly remote and telework) has tended to borrow concepts from the Science and Technology Studies literature, e.g., to discuss how technology mediates spatiotemporal arrangements in new home-based environments (Nansen et al., 2010) and new work-based spatial arrangements (Kingma, 2019). Emphasis has been placed on how technologies mediate the experience of new ways of working, both actively through their shaping of new work modalities, and passively as unintended consequences of their use and appropriation. A strong practice theory-based research stream has also oriented some of this research drawing on sociomateriality as a theoretical lens (Endrissat & Leclercq-Vandelannoitte, 2021). Proponents of computer-supported cooperative work (CSCW) studies also see a role for further research into technology mediation especially regarding new collaborative digital tools (Bullinger-Hoffmann et al., 2021), and some studies draw on the media and communication literature for inspiration in this space (Hafermalz & Riemer, 2016). Materiality and technology affordances also offer conceptual foundations for some of this work (Waizenegger et al., 2020). Paradoxes and dialectics have been implicated in representing the relationship between technology and these new work modalities. For example, technology and its paradoxical relationship with new ways of working have been highlighted in studies about how digital technologies create situations for workers where both autonomy and control, flexibility and constraint are simultaneously experienced (de Vaujany et al., 2021; Mazmanian et al., 2013; Sewell & Taskin, 2015; Vidan & Lehdonvirta, 2018).

We argue, however, that space and time need to be considered much more deeply and comprehensively, particularly in light of the COVID-19 pandemic that made the fusion of time, space and technologies much more visible. Richardson (2021) argues that the "office is an active space that is both produced by and producer of technological changes to working activity" (p.360). In this sense, examination of technologies in their situated actions and spaces of activity, and the constitution or mechanism of technologies and their social role in the context of hybrid work can provide insights into creation and transformations to all three spaces (e.g., office, personal, and virtual online cyberspace) and social relations within these spaces, organisation of work, and operation of power. Another aspect of technology in the re-spatialisation of work is the neutrality of the technologies. Since re-spatialisation of work cannot happen without the support of technology (Lefebvre, 1991), technologies are not and cannot be simply neutral tools as they become a category of power and negotiation and actively participate in re-spatialisation of work at the same time they are used as tools to exercise negotiation and power. Therefore, examination of the dialectical relationship between technologies and spaces provides insights into the formation of new forms of workplace and work.

While re-temporalisation cannot be considered separately from the spatial dimension of work, we posit that, in considering the re-temporalisation of work, we need to reconsider the role of technologies, too. It is well known that technology challenges the boundaries between work and personal life by making these permeable and resulting in negative implications about work-life balance and well-being (Sewell

& Taskin, 2015). At the same time, digital technology creates new models of time and temporalities, where the present becomes decoupled and detached from linearity (Adkins, 2011), resulting in affective experiences that have not been explored as much by the existing literature (Holt & Johnsen, 2019), especially within the context of new work modalities (Zamani & Spanaki, 2023). Technology mediates work, work opportunities, and experiences of collaboration with others within the context of our circumstances and temporalities. Re-temporalisation requires us to think of the future as always expected but never arriving (Thornhill, 1998), as personal time is continuously colonised by work time and the needs of the present (Suckert, 2021). In this respect, experiences of the present and time may be considered as 'loss' (Shippen, 2014). It is in this context that digital technologies may mediate chronopathic experiences, and in turn become the conduit for chronotelic behaviours (Johnsen et al., 2019).

In this regard, several areas require further exploration as far as (re)temporalisation of hybrid work and the role of digital technologies are concerned. For example, as part of hybrid work, technology may mediate affective experiences that are destructive to workers' performance, productivity and well-being (Zamani & Spanaki, 2023), where the technology itself exacerbates potential negative perceptions regarding hybrid working by imposing a rhythm for work and production cycles. Considering that not all workers are equally tech-savvy, the (re)temporalisation of hybrid work may further require additional time investments to develop the required digital skills that will enable seamless hybrid working experiences and smooth out any potential conflicts among co-workers. Another interesting aspect is the role of digital technologies and particularly how their features may support workers to negotiate hybrid working arrangements and work patterns with the organisation and their teams along the time continuum, as well as how such arrangements may influence the (re)temporalisation of other activities when work and personal life interface during the workday.

5. An Integrated Approach to Hybrid Work

Hybrid working re-spatialises and re-temporalises work, organisation, and management (Cohen, 2019; Halford, 2005). The consequences of re-spatialisation and re-temporalisation of work, organisation, and management include increasing the autonomy of the individual worker in determining when and where to work (O'Connor et al., 2023), increasing flexibility of when and where work is performed, and reconfiguration of social relationships between co-workers (Halford, 2005; Sewell & Taskin, 2015) and between the individual worker and family members (Abdullah et al., 2020). Additionally, changes in the operation of power and shifts in organisational power both lead to direct and indirect control and surveillance of individual workers (de Vaujany et al., 2021).

Along these lines, because hybridity changes the way work is organised, it raises specific questions concerning visibility, presence and absence (Felstead et al., 2005), as managers and their subordinates become both spatially and temporally separated from each other (Leclercq-Vandelannoitte, 2021). But this also raises questions regarding legitimacy, authority and autonomy. For example, both managers and employees may look for ways of making themselves more visible to each other, and thus deliberately introduce, create and adapt spatial structures: managers may do this for the purpose of (re)affirming their authority (Leclercq-Vandelannoitte, 2021), whereas employees may do the same so as to remain in management's awareness despite being at a distance.

It is these questions we posit can be best addressed through the lenses of virtuality and materiality, where the two become integrated and help us explore their interrelationship as well as the implications and possibilities for hybrid work. Specifically, we posit that integrating the spatial and temporal dimensions within the hybrid work domain requires us to explore this work modality as one that combines virtuality and materiality, where work, technology, space and time are fused together rather than merely co-existing (Chamakiotis et al., 2023). Virtuality allows us to consider and analyse the temporal and spatial disembedding of human activity and its subsequent re-creation in online and digital spaces (Nardi, 2015). Materiality allows us to inform this analysis with the sociotechnical nature of technology over space and time, irrespective of the differences in how said technology might be used

(Leonardi, 2012). In this context, hybrid work provides an opportunity for investigating the affordances virtuality entails coupled with the material aspects of technology and work, i.e., a virtual-material nexus of action possibilities. This nexus allows us to re-engage with scholarly debates on technological agency from the perspective of intertwined virtual and material aspects of hybrid work, using tried and tested theoretical lenses as above or new perspectives arising from cognate fields or new conceptualisations.

Approaching hybrid work and its spatiotemporal dimension via the fusion of virtuality and materiality is critical, and Information Systems (IS), undoubtedly, have a central role in hybrid work as they facilitate the creation of hybrid workspaces. They enable work, particularly knowledge work (Sewell & Taskin, 2015; Waizenegger et al., 2020), and routine jobs, such as data entry and data processing (Stanworth, 1998), to occur outside traditionally defined spatial and temporal boundaries, such as office buildings, home-based offices, and 9-5 work patterns. Yet, despite the importance of IS, very few studies have focused on the IS as an artefact that affords (re)fining spatiotemporal boundaries of work, organisation, and management (e.g., Abelsen et al., 2021; Bélanger & Allport, 2008; Greenhill & Wilson, 2006; Hacker et al., 2020; Messenger & Gschwind, 2016; Waizenegger et al., 2020). With regards to the materiality of technology more specifically, despite this being intertwined with the social aspect of work (Orlikowski & Scott, 2008), where virtuality and materiality become entangled (Robey et al., 2003), there is a scarcity of studies that foreground the IS artefact within the context of such relationships. Indeed, in the hybrid work literature, the way the social and the technical shape each other is most often undertheorized, and thus the implications of this entanglement tend to be underplayed. To date, studies that have focused on the technological component of hybrid work have explored it as co-occurring with or implicated in, organisational and social processes (e.g., Abelsen et al., 2021; Bélanger & Allport, 2008; Greenhill & Wilson, 2006; Messenger & Gschwind, 2016), without exploring at the same time technology as an artefact that can produce the social phenomenon observed. Naturally, there are certain exceptions. For example, Endrissat & Leclercq-Vandelannoitte (2021) have explored the way technology is entangled in producing coworking spaces, Richardson (2021) draws attention to the spatial and temporal processes that underline the platformisation of work, and more recently, Chamakiotis et al. (2023) explored hybridity and liminality as two concepts that can help us understand how the boundaries between work and personal life may be negotiated. There is also a significant stream of research that draws from affordance theory and which focuses specifically on the materiality of technology in relation to work arrangements (e.g., Hacker et al., 2020; Siegert & Löwstedt, 2019; Waizenegger et al., 2020), theorising and explaining how technology and systems mediate new work modalities and how they create and shape new spaces for/of connectivity.

We argue that opening the 'black box' to explore the relationships between digital technologies and the temporo-spatial configurations of new ways of working could draw upon existing theorisations as above or create new research pathways such as those potentially offered by exploring the mediating role of technology in work-time-space configurations using concepts from post phenomenology (Idhe, 2009) or the generative mechanisms of ensembles in creating the conditions for time-space-work reconfigurations by drawing on critical realist thinking (Mingers et al., 2013). There is also room for incorporating the wider social science literature that explores issues of power, control, systemic injustice and other topics in a more critical theoretical research tradition. This is especially important where the nexus between technology, hybrid work and temporo-spatial arrangements could impact those who are already excluded from privilege or marginalised in some other way.

6. Papers in this special issue

This special issue comprises of four papers, each providing insights into hybrid work from different vantage points. All four touch upon in some way the virtuality-materiality nexus, helping to advance our understanding of hybrid work through a fusion of time, space and digital technology, where the latter is placed centred stage.

Benabid and Abdalla Mikhaeil (2024) focus specifically on the visibility paradox that emerges within hybrid workspaces, and investigate workplace learning and the affordances on enterprise social

networks (ESN). The authors place a considerate emphasis on how ESN promote collaboration and connection among geographically dispersed individuals, and the ways in which such technologies can promote and support learning. At the same time, however, they unearth and highlight socially constructed tensions arising due to visibility concerns and the integration of ESN within vicarious learning practices, some of such tensions pertaining to information overload, and availability. These socially constructed tensions, the authors argue, indicate the existence and importance of spatiotemporal relationships, where individuals make spatiotemporal adjustments to their practice for learning-related activities, particularly because vicarious learning in hybrid work arrangement takes place within both the personal and the professional domains, in digital and physical workspaces.

John et al. (2024) focus around a different kind of digital technology and investigate employee experience management (EXM) platforms. In doing so, they focus on digital embeddedness, and draw from Suchman's configuration lens (Suchman, 2007) to unpack the ways in which humans and technologies influence, shape and reshape each other. Their work highlights very clearly the virtuality-materiality nexus, as they illuminate the ways in which EXM become embedded in hybrid work, and create two different versions of such embeddedness, the digital/human and the digital/workplace. More crucially, the authors explain that both versions configure and reconfigure each other over time through adaptation, transformation and reconfiguration. Crucially, the authors provide a very clear illustration of how Microsoft Viva, the EXM platform under investigation, contributes in the configuration and reconfiguration process of employee experience and hybrid work.

Lamovšek et al. (2024) also focus on configurations, but specifically work design configurations, and examine differences among these within the context of on-site, remote and hybrid work arrangements, and with reference to high task performance. Based on their findings, the authors argue, that the hybrid work modality is the most complicated work design among these three, where on-site and remote work elements get combined, and where there are greater demands in terms of task variety, information processing and enhanced feedback mechanisms. These elements evidently influence employees' task performance, but at the same, time, we intuitively understand that these constitute integral considerations for the design and use of digital technologies, as the degree of virtuality and the materiality of said technologies will pose demands and offer opportunities for adjusting task variety, facilitating information processing as well as capturing and communicating feedback to employees and organisations. This study further highlights the significance of combining IS and Organisation Studies for understanding and examining the domain of hybrid work.

The final paper is that by Griva et al. (2024) and focuses on creating strategies for the 'third way of working' bringing time to the forefront of hybrid work design. The study addresses the fact that time is often omitted or oversimplified in hybrid work literature, which typically focuses on concepts such as time differences, flexibility, asynchronicity, and temporal boundaries. The authors highlight that temporal concepts are crucial in hybrid settings, as the speeding up of activities, temporal rhythms, and personalities affect employees' collaboration and productivity, and they also pinpoint temporal concepts that must be considered when designing hybrid work. In this regard, the authors challenge the assumption that work activities and their temporal mapping conducted in the physical space can be faithfully replicated in the digital space without changing any aspects of the work; instead, the authors argue that in a hybrid work environment, augmentation is required to adapt the temporal mapping of work activities in the digital space to achieve better outcomes.

To conclude, the papers in this Special Issue conceptualise and investigate hybrid work by considering temporo-spatial configurations of work and the role of technologies in such configurations. They contribute interesting and novel insights to the existing literature of alternative work modalities, such as hybrid work, and help us understand and influence further work through a spatiotemporal perspective, where virtuality and materiality are interwoven together.

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