Stream 12: Organisational Behaviour
Competitive Session

Person, environment, and virtual work adoption: Back to basics

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ABSTRACT:

Virtual work is becoming more and more commonplace in the globalised and increasingly complex business environment. To adapt, many organisations are adopting technologies and policies to implement virtual work practices. However, it is important to understand the potential barriers and facilitators of the take-up of virtual work practices among employees. We present a model and propositions about virtual work take-up, as a function of individual and environmental factors. We argue that individuals' perceptions about their ability to perform under virtual work arrangements (virtual work self-efficacy) and individuals' perceptions about whether the environment is conducive to virtual work (virtual work climate) play central roles in virtual work practice adoption. We conclude by discussing the scholarly and practical implications of our work.

Keywords: attitudes, job and work design, motivation, perception

Virtual work, or "work [that is performed] away from a central office using technology" (Raghuram & Wiesenfeld, 2004, p. 259), is becoming more prominent for several reasons. Primarily, increasing demand for virtual work comes from employees' increasing desire and need for flexibility in their work hours, in addition to how and where their work is performed(T. D. Golden, 2006; Raghuram & Wiesenfeld, 2004). Other reasons for the increase in virtual work include the potential savings on corporate travel and real estate for employers (Martins, Gilson, & Maynard, 2004) and the necessity for it in today's globalising and increasingly complex business environment (Gibson & Gibbs, 2006). While much research has focused on the outcomes of different types of virtual work across varying types and amounts of distance (e.g., Bartel, Wrzesniewski, & Wiesenfeld, 2012; T. Golden & Fromen, 2011), a very important matter has received very little attention. Before any of the potential benefits of virtual work may be realized, and before organizations can successfully navigate the business environment of today and tomorrow, individual employees must accept and adopt virtual work arrangements in the first place.

Despite virtual work becoming increasingly utilised, many employees may be hesitant to adopt virtual work practices, despite their strong desire for increased flexibility. This hesitation may be driven by *personal* reasons, such as a belief that they are not effective workers under such arrangements; or from *environmental* reasons, whereby the organisation is perceived to be unable to support effective virtual work. Although there is much literature on the adoption of *technology* in organisations (Bagozzi, 2007; King & He, 2006)**,** there has been little research on the adoption of working virtually or remotely. Not only does virtual work entail the integration of particular technology and tools in daily work, it also entails a different mode of working and interacting with colleagues.

In an effort to understand individual virtual work take-up, we draw on basic social psychological theories to present a model of individual virtual work adoption and to present several propositions. We posit that characteristics of both the individual worker and the organizational environment determine the individual's self-efficacy for virtual work and motivation to work virtually, leading to the individual's take-up of virtual work practices. Additionally, we introduce a new concept

to the literature, virtual work climate, to reflect how the organisational environment can act to enable (or prevent) employees from feeling ready to adopt a virtual mode of work.

Our research is important for several reasons. First, it reveals the potential benefits of reconsidering and applying basic social psychological theories to contemporary phenomena. Second, this research offers a theoretically grounded model of virtual work take-up that contributes a discussion of the important but unexplored concept of "virtual work climate" in addition to "self-efficacy for virtual work." Third, this research provides insight to developers of virtual work technology as they attempt to understand how potential adopters arrive at their decisions. Such an understanding will undoubtedly aid these technology developers in their efforts to innovate technologies that maximise adoption. Fourth, according to some scholars, research examining the *person* in virtual work is limited (Wang & Haggerty, 2011), and so our focus on individual characteristics will add to this limited literature, specifically for virtual work adoption. Finally, our work results in several prescriptions for leaders of organisations, in terms of the facilitators and the barriers that might exist to individual adoption. Our model has practical implications for leaders as they prepare their work environments and their people, particularly where virtual work is (or will be) a necessary part of an organization's business.

THEORY

We submit that individual take-up of virtual work practices must fundamentally be viewed as a behaviour that is jointly driven by the individual's personal characteristics and his/her environment. This is consistent with Lewin's (1951) field theory, which states that behaviour is a function of person and environment, or $B = f(P, E)$. We therefore argue that individual characteristics and environmental factors jointly determine whether an individual is motivated to adopt virtual work practices. Though this theory is broad, it provides a robust starting point from which we present the following proposition:

> *Proposition 1: Individual take-up of virtual work practices is a function of individual characteristics (including capabilities, needs, beliefs, and preferences) and environmental characteristics (including relational and structural factors).*

We also posit that this function largely entails two intervening mechanisms. First, following social cognitive theory (Bandura, 1977; Wood & Bandura, 1989), certain individual and environmental features determine an individual's "virtual work self-efficacy." Second, characteristics of the individual and environment similarly lead to an individual's perception of the organization's "virtual work climate." Following institutional theory (DiMaggio & Powell, 1983), we posit that isomorphic pressures generate collective perceptions that are either conducive or hostile to the exercise of choice to work virtually. We discuss each of these mechanisms in detail.

Virtual work climate

Importantly, the right side of Lewin's (1951) expression, $B = f(P, E)$, entails not only the independent effects of "person" and "environment," but also the interactive effect—which includes the person's *perception* of the environment. Research on psychological climate is based on this notion. Psychological climate refers to "[t]he individual's cognitive representations of relatively proximal situational conditions, expressed in terms that reflect psychologically meaningful interpretations of the situation" (L. R. James, Hater, Gent, & Bruni, 1978, p. 786). In other words, individuals' perceptions of climate are cognitive evaluations or appraisals of the environment and its significance to them (L. R. James & Jones, 1974). Assessments of psychological climate may be taken across individuals within an organization and, given that they are in agreement to some degree, aggregated to what is known as "organizational climate" (L. R. James, 1982; Patterson et al., 2005). Climate is proposed to be an antecedent of individual attitudes and behaviors, including job satisfaction, though these relationships may indeed actually be reciprocal in nature (L. R. James et al., 2008).

Climate has been dimensionalised in different ways, often yielding dimensions relating to roles, jobs, leaders, and work groups and likely driven by a single superordinate general or "*g*" climate factor (L. A. James & James, 1989; L. R. James et al., 2008). Scholars have also submitted that certain domain-specific climates may be observed—such as service climate (Schneider, 1990), creativity and innovation climate (Ekvall, 1996), safety climate (Mearns & Flin, 1999), and diversity climate (Kossek & Zonia, 1993). We similarly propose that individuals may perceive a virtual work climate, which refers to cognitive appraisals of whether the environment is conducive to virtual work.

A positive virtual work climate would entail perceptions that the environment—including the structure and processes of the organisation–and individual support and encouragement regarding working remotely via computer-mediated communication and collaboration tools, allow the individual to successfully adopt virtual work practices. Individuals who perceive a positive virtual work climate are essentially interpreting the environment in such a way that is likely to induce perceptions of subjective norms and control beliefs that ultimately increase their intentions to participate in virtual work (Ajzen, 1985). Therefore,

Proposition 2: A positive virtual work climate increases the likelihood of individual take-up of virtual work practices.

Psychological climate has generally been found to be a function of the work group structure and job attributes (L. R. James et al., 2008). When individuals perceive a positive virtual work climate, they are essentially making the judgment that virtual work arrangements are supported, and perhaps even encouraged, by important others at work and that the structure of the work and organization is compatible with such arrangements. In line with this thinking, institutional theory (DiMaggio & Powell, 1983) would suggest that coercive isomorphism, mimetic processes, and normative pressures lead to collective perceptions (i.e., organizational climate) that ultimately influence individual behavioural choices about virtual work. Specifically, isomorphic pressures may be reflected in structural and relational factors such as policies dictated by the organization and its leadership (coercive isomorphism), workplace practices originating in and adopted from other organizations (mimetic processes), and norms that are developed and legitimized in professional circles (normative pressures).

Thus, we propose that:

Proposition 3: Virtual work climate perceptions are determined by a) relational factors and b) structural factors.

Self-efficacy for virtual work

Lewin's (1951) interactionist perspective is also present in social cognitive theory (Bandura, 1977; Wood & Bandura, 1989). This theory also argues that behaviour is a function of person and

environment, but is more explicit in its assertion that behaviour may also influence both person and environment. In other words, the theory posits that reciprocal causal relationships exist among person, environment, and behaviour, though these reciprocal relationships are not necessarily simultaneous or equivalent to one another in strength (Bandura, 1977; Wood & Bandura, 1989).

A focal concept in social cognitive theory is self-efficacy, or the belief that one can "successfully execute the behavior required to produce the outcomes" desired (Bandura, 1977, p. 193). Self-efficacy may be enhanced through one's own performance accomplishments, vicarious experience (such as behavioural modelling), verbal persuasion, and emotional arousal (Bandura, 1977). Because self-efficacy is a domain-specific construct, scholars have identified numerous types, such as creative self-efficacy (Tierney & Farmer, 2002), change self-efficacy (Herold, Fedor, & Caldwell, 2007), leadership self-efficacy (Paglis & Green, 2002), and knowledge-sharing self-efficacy (Bock & Kim, 2002). We propose that virtual work adoption at the individual level entails a self-efficacy for virtual work, which we define as the belief that one can successfully engage in virtual work practices to produce the work outcomes desired. This will generally involve an understanding of one's current work requirements and outcomes, and a determination of whether ICT may be used to maintain or exceed current levels of performance.

Recently, Wang & Haggerty (2011) examined their own conceptualisation of virtual self-efficacy to virtual work predict performance and satisfaction with virtual work. In their model, virtual competence was considered as a latent variable reflecting computer self-efficacy (confidence with completing a job through using new software), remote work self-efficacy (confidence completing virtual work remotely despite difficulties involved with access and self-organising), virtual social skills, and virtual communication media skills. That is, they conceptualised virtual self-efficacy as an individual's belief in his or her own abilities to use information communication technologies and accomplish tasks while being remote from the central office. Importantly, the authors found that virtual self-efficacy seemed to help individuals cope with and persist through difficulties with virtual work, yet they did not examine virtual competence or self-efficacy as predictors of initial virtual work adoption. Though Wang and Haggerty found that virtual competence positively related to outcomes of virtual work, virtual competence and aspects of virtual self-efficacy have scarcely been touched upon

in the literature, despite being an important avenue for our understanding of virtual work adoption and outcomes of it (Gilson, Maynard, Young, Vartiainen, & Hakonen, 2014).We propose to pull the concept of virtual work self-efficacy into a model that explains virtual work adoption. Consistent with social cognitive and social learning theory, we propose that high self-efficacy for virtual work will motivate the take-up of virtual work practices. In other words,

Proposition 4: High self-efficacy for virtual work increases the likelihood of individual take-up of virtual work practices.

In their model, Wang & Haggerty (2011) argue that the drivers of perceived virtual self-competence or self-efficacy is the experience of working virtually. That is, self-efficacy with working virtually comes *after* doing it successfully. However, this does not take into account the fact that self-efficacy might exist via other means, as discussed above. For example, more general skills such as planning, organising, and maintaining relationships, might be transferrable to virtual work, and may enhance one's virtual work self-efficacy perceptions. Additionally, our focus is primarily on what determines adoption of virtual work rather than the ongoing utilisation of it. Also logically consistent with other prior theoretical and empirical work, we expect that self-efficacy for virtual work will be derived from individuals' reflections on their own individual capabilities and prior accomplishments and on the support, encouragement, and observed experiences of others with whom they work (Bandura, 1977; Wood & Bandura, 1989).

Structural factors are also likely to present obstacles or to allow individuals to more easily persuade themselves of the feasibility of virtual work. For example, perceptions of the capabilities of ICT, such as internet speed at the potential remote work sites and the expected reliability of these tools, may impact on an individual's self-efficacy to effectively work virtually. If the internet or computer-mediated communication tools are expected to be unreliable, such as slow internet speeds or frequent disconnections, the individual may feel that, as a result of unreliable or poor ICT, they would be much less effective working virtually compared to staying in the central office. They may thus hesitate to adopt virtual work practices. In sum, we therefore expect that:

Proposition 5: Self-efficacy for virtual work is determined by a) individual capabilities, b) individual needs, beliefs and preferences, c) relational factors, and d) structural factors.

Through this set of propositions, we have implied that virtual work climate and self-efficacy for virtual work are expected to mediate any main and interactive effects of individual and environmental factors on individual take-up of virtual work practices. We should note, however, that capabilities, needs, beliefs, preferences, relational factors, and structural factors are likely to exert influence on individual take-up above and beyond the predicted intervening effects. A straightforward example of this would be a case in which a geographically remote individual is not provided with the ICT necessary to work with others in an organization that otherwise quite virtual work-friendly. Regardless of the individual's perceptions of his/her self-efficacy and the virtual work climate, structural constraints to ICT resource allocation will prevent him/her from taking up virtual work practices. Therefore, as our final proposition, we predict that:

Proposition 6: Virtual work climate and self-efficacy for virtual work partially mediate the effects of individual and environmental factors on individual take-up of virtual work practices.

Our propositions are summarized in the model presented in Figure 1.

[Insert Figure 1 about here.]

DISCUSSION

Our theoretical model of individual take-up of virtual work practices offers a scholarly contribution, opens up directions for future research, and contains practical implications for ICT developers and organizational leaders.

Scholarly contributions and directions for future research

Most important, we have presented a theory-based model of virtual work practice take-up and offered the notion that psychological climate and self-efficacy likely play a central role. In addition, we have presented a model and propositions from which testable hypotheses may be derived for empirical research. Future theoretical and empirical research should explore the proposed constructs and their antecedents in more depth.

Second, our theoretical discussion and the model that follows suggests that some traditional theories—specifically field theory (Lewin, 1951) and social cognitive theory (Bandura, 1977; Wood & Bandura, 1989), integrated with more contemporary insights drawn from institutional theory (DiMaggio and Powell 1983)—have novel applications for contemporary phenomena, such as virtual work. While some studies of virtual teams and virtual work have incorporated such theories as social identity theory (e.g., Webster & Wong, 2008) and social exchange theory (e.g., T. D. Golden & Veiga, 2008), our review of the literature suggests that the call for a richer theoretical foundation in this area over a decade ago by Martins, Gilson, and Maynard (2004) is worth repeating.

Third, this paper extends previous work on forms of organisational climate and introduces the concept of virtual work climate, representing a form of organisational 'readiness' that enables individuals to feel able to adopt virtual work practices. The introduction of such a concept opens several avenues for future research into virtual work adoption, in addition to organisational and environmental aspects for virtual work success. Focusing on virtual work climate, in addition to aspects of the individual, pushes this research forward and may lead to important practical outcomes for leaders and their organisations.

Practical implications

Our work is the beginning of a line of research that will have important implications for ICT developers and organizational leaders. Although ICT is advancing exponentially, there is no guarantee that the capabilities of potential users will do the same, nor is there any guarantee that any particular advancement will match users' needs and preferences. Understanding how people perceive, evaluate and respond to their environments, as well as the social cognitive processes driving the take-up of virtual work practices will aid ICT developers in their work. Understanding such social psychological processes within the context of virtual work will also undoubtedly prove useful to organizational leaders who aim to implement virtual work practices toward potential organizational benefits, such as reduced real estate and travel costs, or even enhanced behavioural and attitudinal outcomes at the employee level.

CONCLUSION

As the nature of work continues to changes and evolves in response to changing demands from customers, employees and the environment, it will be important to understand how the social psychological nature of humans adapts to these changes. Returning to basic, but robust, theories of human behaviour and social cognition will provide critical insight into contemporary phenomena such as virtual work. In this paper, we have presented an initial theoretical model of virtual work take-up based on individual and environmental factors. Our propositions based on field and social cognition theories, provide a foundation for understanding virtual work take-up and give rise to important new directions for both research and practice.

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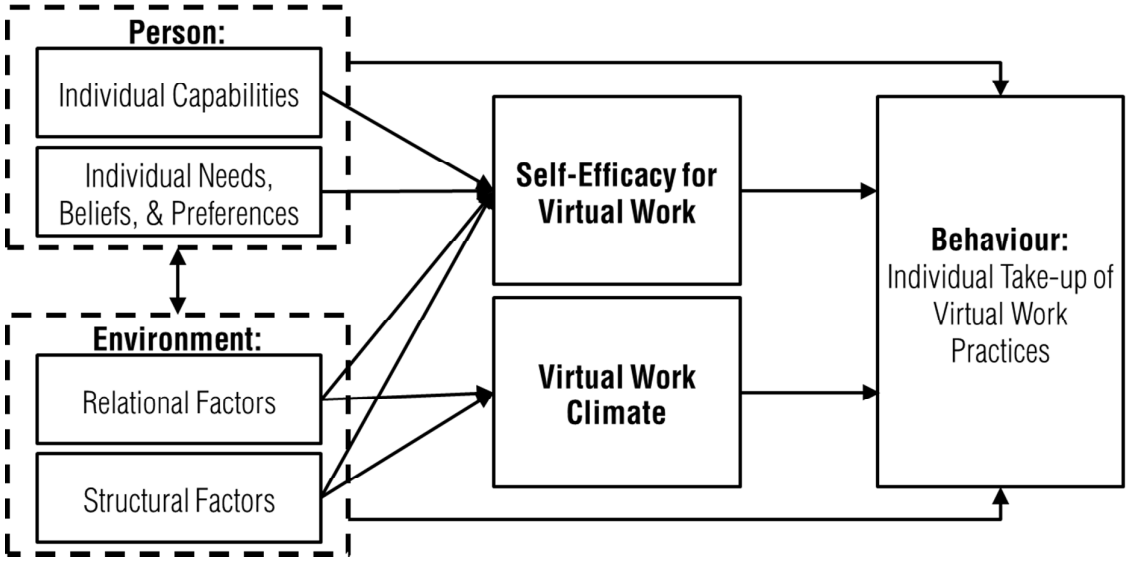

Figure 1. The proposed model for individuals' virtual work take-up.