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Blended Working

Nico W. Van Yperen and Burkhard Wörtler

Introduction

A pervasive and booming trend in modern societies is the increasing reliance on new and continuous improving information and communication technology (ICT) software, devices (computers, tablets, hand-held and wearable devices, etc.), and infrastructure (i.e., increased availability of high-speed broadband connections). This development provides flexibility in where, when, and how long people work, learn, and care, referred to as *blended working* (e.g., Van Yperen, Rietzschel, & De Jonge, 2014), *blended learning* (e.g., Hew & Cheung, 2014; Owston, 2013), and *blended care* (e.g., Wilhelmsen et al., 2013). This, in turn, creates opportunities for improving individual, organizational, and societal outcomes in ways that were not previously possible.

The central concept in this chapter is blended working, a term recently introduced by Van Yperen et al. (2014). Blended working combines on-site and off-site working, enabled by the utilization of ICTs that provide workers with almost constant access to job-relevant information and co-workers. Blended working refers to smooth and seamless time-independent working (flexibility in when and how long workers engage in work-related tasks) and location-independent working (flexibility in where work gets done). Working from the office, having a business meeting with colleagues in a restaurant, preparing a meeting in the train, online file sharing, and work-related use of tablets and smartphones are examples of blended working practices (De Jonge, Van Yperen, & Rietzschel, 2015). Often used related terms in the industrial and organizational psychological literature are teleworking and telecommuting, terms that suggest that workers are either remote workers (i.e., teleworkers) or office-based workers (Harris, 2003; Kurland & Bailey, 1999; Wilks & Billsberry, 2007). As noted by Hill, Ferris, and Mårtinson (2003), the literature and language around telework is imprecise: “It is difficult to distinguish between the virtual office and varieties of telecommuting because terminology differs from study to study” (pp. 223–224). In contrast, the term blended working unambiguously refers to a work arrangement in which workers alter between traditional office working and working from home or another location at any time. Particularly knowledge and information workers, whose jobs mainly revolve around obtaining, analyzing, and sharing knowledge, typically *blend* on-site and off-site working and

are flexible in when and how long they work (O'Neill, Hambley, Greidanus, MacDonnell, & Kline, 2009; Wheatley, 2012). That is, they may work during traditional office hours or choose to work in the evening, on weekends, or any combination of these. With regard to the location, workers may work at the office (which can include "hot desking," e.g., Millward, Haslam, & Postmes, 2007), at home, on the move, or at "neutral" workplaces that are shared, swapped, reserved, rented, or simply claimed for a time, etc. Similar to well-established terms as blended learning (e.g., Hew & Cheung, 2014; Owston, 2013) and blended care (e.g., Wilhelmsen et al., 2013), the term blended working (Van Yperen et al., 2014) probably best covers these flexible working practices and will be used throughout this chapter. More than similar terms such as flexible work (e.g., Rice, 2017, Chapter 9 in this volume), the term blended working emphasizes that it is just one of the manifestations of a more general trend in modern societies to combine multimedia and traditional face-to-face working, learning, and caring at any time and in any place.

Blended working has the potential to provide considerable benefits to both organizations and individual workers, but also evident are some potential negative consequences (see also Rice, 2017, Chapter 9 in this volume). We summarize and give an overview of the benefits and drawbacks of blended working, and show that blended working:

- may not work for everyone
- can be helpful to cope with high job demands
- may increase workers' job satisfaction
- may be particularly effective for specific groups (i.e., caregivers, older workers, and workers with a physical disability)
- may be most effectively implemented in companies characterized by trust and cohesion or in companies in which workers can be evaluated on the basis of their results.

We start by discussing possible consequences for the organization and the worker, before turning to the focus of this chapter, that is, a discussion of for whom and when blended working does (not) work. Finally, we discuss some promising new research directions.

Possible Consequences of Blended Working for Organizations

A general aim of blended working practices is to improve organizational performance, including productivity, customer service, workers' satisfaction and motivation, collaboration, and workplace utilization, and to reduce negative outcomes such as absenteeism, tardiness, turnover, errors, and time loss (*cf.*, Kurland & Bailey, 1999; Maruyama & Tietze, 2012; Patrickson, 2002; Van Yperen et al., 2014). In addition, blended working is a way for companies to reduce expenses, including real estate costs (Hill et al., 2003), to comply with government regulations regarding equal opportunities, and to demonstrate corporate social responsibility (Morgeson, Aguinis, Waldman, & Siegel, 2013). For example, due to reduced office space requirements, traffic, paper use, etc., blended working may have positive consequences for the environment, such as the reduction to sustainable levels of carbon dioxide emissions, deforestation, and greenhouse gases, and less need for additional office space and highway capacity (Lister & Harnish, 2011; McLennan, 2008).

Blended working may also have drawbacks for organizations. For example, in 2013, the chief executive officer (CEO) of Yahoo Marissa Mayer banned Yahoo employees from working from home because she felt that it undermined a collaborative, inventive environment (Allen, Golden, & Shockley, 2015; Raiborn & Butler, 2009). More generally, leaders may be worried that interpersonal relationships, and accordingly, the positive social

and psychological climate, suffer. Indeed, in their meta-analysis, Gajendran and Harrison (2007) found that working remotely 2.5 or more days per week had a negative effect on co-worker relationship quality. However, there was no damaging effect on the relationship with the supervisor. Moreover, in a follow-up study, Gajendran, Harrison, and Delaney-Klinger (2015) found that the opportunity to work remotely from the office was associated with improved task and contextual performance rather than social costs.

Another potential undesired consequence for organizations may be productivity loss caused by cyberslacking, which occurs when workers use the Internet for nonwork purposes when they are on company time (Block, 2001; see also Charlier, Giumetti, Reeves, & Greco, 2017, Chapter 7 in this volume). Cyberslacking might be perceived as easier to engage in when working away from the office because it is more difficult to detect by supervisors and co-workers (O'Neill, Hambley, & Bercovich, 2014). In line with the contingency approach (e.g., Bailey & Kurland, 2002) and person-job fit theory (Kristof-Brown, Zimmerman, & Johnson, 2005), O'Neill et al. (2014) found preliminary evidence that individuals low in trait procrastination and high in agreeableness and honesty were most likely to avoid cyberslacking when working from home.

Possible Consequences of Blended Working for Workers

Blended working offers unprecedented opportunities for workers to decide when, where, and how to work (Gibson, Blackwell, Dominicis, & Demerath, 2002). Potential benefits include saving time (due to reduced commuting time) and freedom from workplace distractions and interruptions (Cutler, 2006; Van Yperen et al., 2014). Working connectedly may increase efficiency in information access and can provide workers with information and feedback that they would not have obtained as easily or quickly otherwise (Mazmanian, Orlikowski, & Yates, 2005). However, blended working may not be suitable for every worker. Person-job fit theory (Kristof-Brown et al., 2005) underlines that workers are most motivated and perform best when the requirements and affordances of the (physical and nonphysical) work environment are aligned with their own needs and abilities. In line with this approach, O'Neill et al. (2009) found that personality traits are differentially related to job effectiveness depending on whether one works in a traditional office-based setting, or in a setting which provides the opportunity to work remotely from the office. For example, sociability, that is, one's tendency to enjoy conversation, social interaction, and parties, may be an undesirable trait for blended workers because of relational and information impoverishment at work (Kurland & Bailey, 1999). On the other hand, working connectedly via online devices enables workers to maintain or even extend their contact with co-workers, and accordingly, may avoid social impoverishment and isolation when working off-site (Cutler, 2006; De Jonge, et al., 2015). In any case, to be successful, blended working practices should ensure opportunities for face-to-face communication, for developing supportive processes and structures, and for exchanging occupational knowledge (Maruyama & Tietze, 2012).

Other potential drawbacks of blended working for those working primarily away from the office are career stagnation ("out of sight, out of mind"), increased work-home interference, distraction and interruption by family members (particularly when there is no detached home office space), social loafing behavior in the (virtual) team, technostress, and procrastination (e.g., Allen, Johnson, Kiburz, & Shockley, 2013; Bartel, Wrzesniewski, & Wiesenfeld, 2012; Gerdenitsch, Kubicek, & Korunka, 2015; Greer & Payne, 2014; Kelliher & Anderson, 2010; Maruyama & Tietze, 2012; O'Neill et al., 2014; Perry, Lorinkova, Hunter, Hubbard, & McMahon, 2016; Salanova, Llorens, & Cifre, 2013; Wheatley, 2012).

Furthermore, being able to decide when, where, and how to work may come with the cost of increased complexity, and being constantly connected can induce feelings of external control, resulting from the pressure to be available anywhere, at any time. This presents the challenge to workers to manage the blurring of the home–work interface, which may put a strain on themselves and on their relations with partners, family members, and friends (see also Rice, 2017, Chapter 9 in this volume). Ambiguity about tasks and roles may arise from increased work–home interference, and because being continuously connected to co-workers makes it unclear whether, how, and when information will be pushed to one’s workplace.

However, a large-scale meta-analysis by Gajendran and Harrison (2007) indicated that work arrangements allowing workers to perform their tasks while being remote from their office, had mainly beneficial effects on work–home balance, job satisfaction, and job performance, and generally had no detrimental effects on the quality of the relationship with the supervisor or on perceived career prospects. Other studies also support the idea that flexible work arrangements are likely to benefit both the employee and the employer in many ways (e.g., Maruyama & Tietze, 2012). The blurring of the home–work interface, or permeable borders between work and family, may even be a prerequisite for achieving work–life balance (Ashforth, Kreiner, & Fugate, 2000; Hill et al., 2003). Importantly, Gajendran and Harrison’s (2007) meta-analysis also showed that the effects of flexible work arrangements were moderated by variables such as the intensity of, and experience with off-site working, and sex. Thus, the consequences of blended working may be more favorable (or unfavorable) for some people than for others, which raises the question for whom blended working is most likely to work (Matusik & Mickel, 2011; O’Neill et al., 2009). Van Yperen et al. (2014) recently demonstrated that the perceived personal effectiveness of blended working is contingent on the strength of the worker’s psychological needs, that is, their need for autonomy, need for relatedness, need for competence, and need for structure (Gagné & Deci, 2005; Thompson, Naccarato, Parker, & Moskowitz, 2001).

Psychological Needs and the Perceived Personal Effectiveness of Blended working

Preeminent in today’s theories of organizational behavior and work motivation is the concept of psychological needs (Gagné & Deci, 2005). Self-determination theory (SDT), one of the most influential psychological needs theories of the last three decades distinguishes three basic psychological needs (Deci & Ryan, 2002): (1) need for autonomy, that is, an individual’s desire to feel volitional and to experience a sense of choice and psychological freedom; (2) need for competence, defined as an individual’s need to feel competent and skilled; (3) need for relatedness, which denotes the need to feel connected to others. Although it has been argued that these psychological needs are intrinsically human (Deci & Ryan, 2002), in industrial and organizational psychology, psychological needs have typically been treated as individual difference variables, implying that people are viewed as differing in the *strength* of particular needs (Gagné & Deci, 2005; Hofer & Busch, 2011). For example, Van Yperen et al. (2014) hypothesized that a worker’s perceived effectiveness of blended working was a function of the strength of the psychological needs for autonomy, competence, and relatedness. In addition, workers with a high need for a structured and predictable environment were expected to perceive blended working as personally ineffective because it fuels their aversion to ambiguity. Need for structure refers to a strong preference for structure and predictability and a low tolerance for ambiguity (Thompson et al., 2001). This need, which is completely neglected in SDT research, is positively related to feedback-seeking behaviors (Ashford & Cummings, 1985), managers’ preference

to guide their subordinates by planning and scheduling work tasks (Ehrhart & Klein, 2001), and a preference for a workplace that helps segment work and home domains (Van Yperen et al., 2014).

In line with their expectations, Van Yperen et al. (2014) found that the stronger the need for autonomy among workers, the more they felt that blended working works for them, because they have more discretion as to where and when to work. In contrast, workers' need for relatedness was negatively related to their perceived personal effectiveness of blended working. Indeed, blended working entails working away from the office and having flexible hours, which may cause workers to feel disconnected from others and socially isolated (Bartel et al., 2012; Cooper & Kurland, 2002; Maruyama & Tietze, 2012; O'Neill et al., 2009), which then obviously interferes with workers' need for relatedness. Furthermore, because blended working tends to create ambiguity (Slijkhuis, Rietzschel, & Van Yperen, 2013), workers' need for structure was inversely related to perceived personal effectiveness of time and location-independent working. Thus, the stronger their need for autonomy at work, and the weaker their needs for relatedness and structure at work, the more workers felt that blended working was effective for them.

Unexpectedly, Van Yperen et al. (2014) did not observe a link with workers' need for competence. On the one hand, this is remarkable because individuals' need for competence is positively associated with the wish to engage in challenging tasks, to acquire new skills, and to perform well (Van den Broeck, Vansteenkiste, De Witte, Soenens, & Lens, 2010). Blended working can be considered a challenging, innovative work arrangement that likely contributes to satisfying workers' need for competence. In line with this reasoning, Dikkers, Van Engen, and Vinkenburgh (2010) demonstrated that career ambition was positively related to workers' utilization of work-home arrangements, including flexible hours and working from home. On the other hand, perceiving a job as new and challenging may be short-lived and primarily a function of work content rather than work arrangement. Furthermore, working away from the office may be associated with lower chances for promotion and expectations of less frequent and more ambiguous feedback, which undermines workers' desire to learn and to advance in their career (O'Neill et al., 2009). For examples, Busch (2008) noted that off-site working "can have a detrimental effect on junior employees, as they are unable to pick up many of the workplace cues they require for on the job success" (p. 39). If face-to-face contact is too limited, blended working may hamper the acquisition of tacit knowledge involving subjective insight and intuition. Particularly apprentices and junior workers may hugely benefit from learning by interaction with co-workers (i.e., learning by observation and knowledge sharing). Van Yperen et al. (2014) concluded that in terms of psychological needs, blended working seems to be most suitable for workers who are high in need for autonomy, low in need for relatedness, and low in need for structure (*cf.*, Dropkin, Moline, Kim, & Gold, 2016). Hence, blended working practices should not be seen as a 'one-size-fits-all' issue. Rather, to find the right solution for every worker, each individual's work-related psychological needs strengths should be considered to assess how well they fit with the core job characteristics (*cf.*, Hackman & Oldham, 1976; Kristof-Brown et al., 2005). For example, particularly for workers high in need for autonomy, the opportunity for blended working may be an effective resource to cope with high job demands.

Blended Working as Resource to Cope with High Job Demands

Quantitative job demands such as work overload, work pressure, or having too much work to do in too little time (Peeters, Montgomery, Bakker, & Schaufeli, 2005), are often perceived as a common contemporary cause of work-related stress (European Agency for Safety and Health at Work, 2013). According to the basic tenets of the job demand-control (JD-C)

model (Karasek, 1979) and the job demands–resources (JD-R) model (Bakker & Demerouti, 2007), it is not high demands per se, but high demands in combination with a lack of job resources (e.g., job autonomy) that undermine desirable work outcomes such as intrinsic work motivation. Intrinsic motivation is the motivation to perform an activity for itself, in order to experience the pleasure and satisfaction inherent in the activity (Deci & Ryan, 2002).

Indeed, to keep workers motivated and satisfied in their jobs, and to keep them effective and productive, job autonomy is generally considered as a core job characteristic (Hackman & Oldham, 1976; Gagné & Bhawe, 2011). O'Neill et al. (2009) demonstrated that relative to traditional office-based workers, workers who worked at least one day per month away from the office reported higher job autonomy. Hence, the perceived opportunity for blended working is likely to be accompanied by perceived job autonomy, and accordingly, potentially an effective resource for workers to cope with the increasing quantitative job demands typically observed in today's workplace (Van Yperen, Wörtler, & De Jonge, 2016). Specifically, both the JD-C model (Karasek, 1979) and the JD-R model (Bakker & Demerouti, 2007) predict that the arousal produced by high job demands will not undermine workers' intrinsic motivation when they perceive opportunities to manage and effectively cope with the high demands. In contrast, when such opportunities are absent (i.e., perceived job autonomy is low), the arousal associated with high job demands cannot be transformed into action and, consequently, will be directed internally and undermine intrinsic motivation (Van Yperen & Hagedoorn, 2003). Thus, the perceived opportunity for blended working may be particularly important for workers' intrinsic motivation when they find themselves in highly demanding jobs.

Indeed, a recent study by Van Yperen et al. (2016) suggests that the perceived opportunity for blended working is an effective, contemporary resource for workers to cope with increasing job demands. However, drawing on person–job fit theory (Kristof-Brown et al., 2005), they demonstrated that this expected pattern applied only to workers with a high need for autonomy. As shown in Figure 8.1, workers high in need for autonomy who perceived opportunities for blended working reported the highest levels of intrinsic work motivation as job demands increased. In contrast, workers high in need for autonomy who perceived little opportunity for blended working reported lower levels of intrinsic

Figure 8.1 Interactive effect of job demands, perceived opportunity for blended working (OBW), and need for autonomy on intrinsic work motivation. “Low” and “high” reflect a value of 1 SD below and above the mean, respectively. n.s., not significant. *Source:* Adapted from Van Yperen, N. W., Wörtler, B., & De Jonge, K. M. M. (2016). Workers' intrinsic work motivation when job demands are high: The role of need for autonomy and perceived opportunity for blended working. *Computers in Human Behavior*, 60, 179–184.

motivation under conditions of high job demands. For workers low in need for autonomy, the perceived opportunity for blended working did not mitigate the negative effect of high job demands on intrinsic work motivation.

The findings presented in Figure 8.1 (Van Yperen et al., 2016) suggest that organizations and managers should create conditions at work that are conducive to workers' psychological needs (Williams, Halvari, Niemiec, Sørenbø, Olafsen, & Westbye, 2014). Although it has been argued that the need for autonomy is intrinsically human (Deci & Ryan, 2002), workers who are relatively low in need for autonomy at work appear to profit less from the opportunity for blended working. Workplace interventions that provide structure and routine rather than job autonomy may work better for them, particularly when they have a high need for structure as well (Leone, Wallace, & Modglin, 1999; Van Yperen et al., 2014). Research has shown that managerial support for psychological needs is positively related to workers' psychological health, social wellness, work-related functioning, and job satisfaction (e.g., Gagné & Deci, 2005; Van den Broeck et al., 2010). For workers with a high need for autonomy, managers should provide opportunities for blended working, which may be particularly effective when job demands are high.

Blended Working and Job Satisfaction

In the field of industrial and organizational psychology, job satisfaction is a central variable of study. One reason is its positive relationships (albeit sometimes weak) with numerous desirable job outcomes, including job performance (Iaffaldano & Muchinsky, 1985), reduced turnover (Tett & Meyer, 1993), and organizational citizenship behavior (Organ & Ryan, 1995). Blended working is likely to pose a valuable means of increasing workers' job satisfaction and, accordingly, related desirable outcomes. Indeed, Gajendran and Harrison's (2007) meta-analysis revealed that working away from the office has modest but beneficial effects on workers' job satisfaction. Such a positive relationship is not limited to Western cultures. Bloom, Liang, Roberts, and Ying (2015) reported that in a nine-month experiment in China ($n = 249$ workers) that compared differences in outcomes such as job satisfaction between home-based working and traditional office-based working, job satisfaction was significantly higher for those working from home.

Other research suggests that the association between off-site working and job satisfaction is more complex, that is, contingent on its intensity. For example, Golden and Veiga (2005) found a curvilinear link between the extent of working outside the office and job satisfaction. At a certain extent of working remotely, the positive association with job satisfaction reached a peak and then started leveling off (*cf.*, Virick, DaSilva, & Arrington, 2010). In their sample, the threshold at which job satisfaction plateaued (and began to slightly decrease) was at around 15 hours of remote work per week. Moderators identified by Golden and Veiga (2005) were task interdependence (i.e., the degree to which organizational members must rely on one another to perform their tasks effectively given the nature of their job) and the extent to which workers had control over how an assigned task should be implemented. Workers occupying jobs which implied low levels of task interdependence and high levels of job control were inclined to experience comparatively higher levels of job satisfaction across all levels of remote work.

So far, it has been argued and demonstrated that blended working as a favorable work arrangement is contingent on both the person (e.g., psychological needs) and the context (e.g., low task interdependence). We now turn to specific subgroups of workers who may particularly benefit from blended working practices, namely workers who have dependent children, older workers, and workers with a physical disability.

Blended working and Specific Groups

Caregivers

The opportunity for blended working may be particularly effective for specific subgroups in organizations to keep them satisfied, motivated, and productive in their jobs (e.g., Maruyama & Tietze, 2012; O'Neill et al., 2009; Wheatley, 2012). For caregivers such as parents with dependent children, blended working may create opportunities for combining working life and childcare that were not previously available, and which are likely to improve and maintain work-life balance (Shockley & Allen, 2007). For example, Mustafa and Gold (2013) found that women with young children who worked from home tended to structure their temporal boundaries around their children's needs and school activities. O'Neill et al. (2009) showed that relative to traditional office-based workers, the workers who worked at least one day per month away from the office were more likely to have children under the age of five or between the ages of 5 and 17. In line with these findings, Van Yperen et al. (2014) found that number of children was positively related to the perceived effectiveness of time-independent working. Others have shown that the opportunity to work from home assists parents in managing both work and caring responsibilities (Maruyama & Tietze, 2012; Wheatley, 2012). For example, Dikkers et al. (2010) demonstrated that utilization of work-home arrangements (including flexible hours and working from home) by parents, and mothers in particular, was positively correlated with number of work hours and satisfaction with one's career.

Another reason blended working practices suit parents with dependent children is that it indirectly benefits the children's health. Working from home has been found to be associated with less frequent use of fast food for children's dinner (Allen, Shockley, & Poteat, 2008). This may also be regarded as an argument for blended working to pose a work arrangement with greater societal value. Note that organizational scientists have begun to consider children's health as even relevant to business concerns, because of its impact on outcomes of interest to organizations. Major, Cardenas, and Allard (2004) reviewed evidence that organizational outcomes such as healthcare expenses, lost time, and employer attractiveness, may be linked to child health issues. They argued that the opportunity to work from home allows parents to more easily and regularly gain preventive healthcare for their offspring, affords them the extra time they require to make satisfactory childcare arrangements in the event of an illness, and enables them to be the ones to care for their sick children. Such flexibility is likely to enhance the fulfillment of their job tasks and productivity.

Likewise, the opportunity for blended working can be particularly effective for workers with care responsibilities for family members with health problems or a disability. Specifically, a key worker benefit commonly associated with flexible working practices is being able to take dependable family members to doctor appointments, ensuring sick family members receive their regular medication, and generally being present for those in need (Major, Verive, & Joice, 2008).

Older workers

The workforce is aging more rapidly than ever before, as post-World War II cohorts reach ages 65 and over (Hedge & Borman, 2012). Many older workers are delaying their retirement not only as a result of, among other things, improved education and health, economic conditions, and flexible retirement options (Elias, Smith, & Barney, 2012; Hertel & Zacher, in press), but also to stay productive and mentally healthy (C. C. Lee,

Czaja, & Sharit, 2009). For organizations, it is important to retain older workers to avoid, or at least lower, the forecasted shortage of 20.8 million workers in the European Union by 2030 (Dropkin et al., 2016; Hertel & Zacher, in press; Sharit, Czaja, Hernandez, & Nair, 2009), and to keep workers with high levels of job expertise within the organization (Hedge & Borman, 2012). Relying on blended working practices may help retain older workers (De Jonge et al., 2015). Age is positively correlated with the need for autonomy (Kooij, de Lange, Jansen, Kanfer, & Dijkers, 2011) and the tendency to work from home (Bailey & Kurland, 2002; Gibson et al., 2002; Lister & Harnish, 2011), and negatively related to work-home segmentation preference, and the need for structure and relatedness (Van Yperen et al., 2014). Blended working fits these preferences and needs (Van Yperen et al., 2014), and accordingly, allows older workers to (re)design their jobs in a way that best suits their needs, including the need to avoid age-related stressors such as long commuting times, noise, and an overcrowded environment (Cutler 2006; Dropkin et al., 2016; Gibson et al., 2002; Hedge & Borman, 2012; Patrickson, 2002; Sharit et al., 2009), and their need for employment participation after their post-statutory retirement age (De Lange, Van Yperen, Van der Heijden, & Bal, 2010).

Other reasons blended working may work for older workers in particular is that they tend to thrive on their expertise and experience, they have had the time to earn the trust that is essential to remote working and to self-managing their work, and they may wish to continue working after retirement (Damman, 2016; De Lange et al., 2010; Dropkin et al., 2016) or move slowly towards retirement by shifting their emphasis more towards leisure time and nonwork activities (West & Anderson, 2005). Older workers and their partners are also more likely to face age-related health issues, and accordingly, mobility limitations (Dropkin et al., 2016; Lister & Harnish, 2011; Thompson & Mayhorn, 2012). Blended working practices allow older workers to balance their work and family responsibilities (Bailey & Kurland, 2002). Indeed, older ages have been found to be related to increased work-family balance, lower work-family conflict, greater job satisfaction and productivity, and lower absenteeism (Anderson, Bricout, & West, 2001; Hedge & Borman, 2012). Nevertheless, older workers may be ill-suited for using new Internet-related technologies due to lack of skill and experience with the computer technologies required for blended working, or lack of confidence or anxiety to use these technologies, which may be fueled by negative stereotypes about older workers (De Jonge et al., 2015; Elias et al. 2012; Hedge & Borman, 2012; Hertel & Zacher, in press; Raiborn & Butler, 2009; Van Dalen, Henkens, & Schippers, 2010). For example, people aged 50 years or more are less likely to own a computer or to use the Internet or computers in general (Cutler 2006; Hill et al., 2003). Only about 40% of those aged 65 years and over use the Internet (Charness, Fox, & Mitchum, 2010). These numbers are likely to increase rapidly in the (near) future because the next generations of older workers increasingly rely on ICTs (Thompson & Mayhorn, 2012). However, older workers often face perceptual, physical, and cognitive decline and may find it difficult to adapt rapidly to changing technological innovations (Thompson & Mayhorn, 2012; see also Burlacu, Truxillo, & Bauer, 2017, Chapter 20 in this volume).

Therefore, older workers in particular may require engaging in ICT training activities, which is advantageous for both the organization and themselves because training investments tend to pay off within a few years (De Jonge et al., 2015; Ng & Feldman, 2012; Patrickson, 2002). Older workers appear to be willing to learn the technological knowledge and skills required for their job, and their experience of success when using new technologies results in favorable attitudes towards it (Czaja & Moen, 2004; Cutler, 2006; Ng & Feldman, 2012; Sharit et al., 2009). To enable these positive outcomes, it is important to provide the right type of training (Cutler, 2006) and to include familiar tasks in the

training program (Czaja & Moen, 2004). Possible physical and cognitive decline need to be taken into account, and the training program must be aligned with the needs of older workers (Dropkin et al., 2016; Thompson & Mayhorn, 2012; Sharit & Czaja, 2012). When older workers have successful experiences with computer technologies, they tend to experience these technologies as reducing the effort and time required to fulfill job tasks and as increasing their job performance, enabling them to keep working effectively and productive (Mitzner et al., 2010).

Workers with a Physical Disability

Among the working-age population in the European Union in 2002, 16.4%, reported that they had a long-term health problem or disability (Eurostat, 2003). Disability imposes severe challenges on the individuals affected, including transportation and lack of support services in the workplace (Schopp, 2004). More than traditional office-based work with a fixed work schedule, blended working poses a work arrangement that is conducive to (facilitated) employability of workers who have a physical disability. For instance, it provides a buffer against the stress of work–life disruptions for disabled people in particular because it allows them control over when and where to work. This is necessary for coping with issues such as fatigue, stamina, and pain, and it allows them to access their healthcare services during the workday (Linden, 2014). Besides facilitating work–life balance, blended working may also create work opportunities for individuals with disabilities who may not be otherwise employable (Hesse, 1996). On the downside, given that blended working for disabled workers may largely comprise home-based working, social and professional isolation (Cooper & Kurland, 2002) may become of concern for those with a high need for relatedness (Van Yperen et al., 2014). Overall, though, the benefits of blended working for disabled workers also points to the greater societal value inherent in such a work arrangement because it promotes equal opportunity. After all, the ability to work is a key component in achieving independence and inclusion in society.

Adoption of Blended Working in Organizations

Despite the advantages of blended working, its adoption has been slower than initially anticipated (Pyöriä, 2011). Management often has insufficient trust in workers working off-site, that is, they are apprehensive that workers will put in as much effort as possible in the absence of close supervision (e.g., Topi, 2004). Hence, it can be assumed that companies that offer the opportunity to work remotely are more likely to rely on incentive systems that compensate workers for results rather than time. Indeed, analyzing data from 122 CEOs in companies with an average number of 92 workers, Mayo, Pastor, Gomez-Mejia, and Cruz (2009) found that offering the opportunity to work away from the office for a certain number of hours per week was more likely among relatively young companies and companies with a high percentage of international workers, *but only* when the CEO reported high contingent reward leadership, that is, the provision of rewards in exchange for results.

Mayo et al. (2009) also found a stronger tendency to adopt flexible working practices in relatively small companies, probably due to their flexibility (or less bureaucracy) and the level of trust that may be higher as the company is smaller. That is, a smaller group size enhances group members' mutual awareness and the ability to monitor each other's behavior, and offers enough opportunities for face-to-face interactions. Research suggests that groupings of around 150 individuals (referred to as Dunbar's number) is the normative limit of the size of personal social networks among adults that can be held together through informal social control (Dunbar, 1993; Van Vugt & Kameda, 2012). Hence,

an organizational climate of cohesion and trust might explain the higher prevalence of flexible working practices in smaller organizations which is, from a management perspective, associated with a higher willingness to take risk (Schoorman, Mayer, & Davis, 2007). In a management environment that trusts them, workers are more likely to organize themselves and their workload in such a way that does not undermine organizational goals. Thus, blended working practices may most effectively be implemented in companies characterized by trust and cohesion (which may be more prevalent in smaller companies), and in companies in which workers can be evaluated on the basis of their results.

Future Research

Blended working practices are associated with high perceived job autonomy (O'Neill et al., 2009; Van Yperen et al., 2014), which is generally considered as a core job characteristic (Gagné & Bhawe, 2011; Hackman & Oldham, 1976). Similar to more traditional indices of job autonomy, our findings indicate that blended working is an effective resource for workers to cope with high job demands (Van Yperen et al., 2016). Future research may be directed at identifying implications of blended working for other domains in which job autonomy has been shown to be important, such as creativity (Hennessey & Amabile, 2010) and counterproductive work behaviors (Brink, Emerson, & Yang, 2016). In general, the impact of blended working on workers' *actual* job performance through job autonomy should be put to empirical test, which is likely to be a function of characteristics of both the worker (e.g., workers' psychological needs, personality factors) and the environment (e.g., type of work, leadership style, organizational culture).

Moreover, due to people's general preference for face-to-face interactions (e.g., Topi, 2004), future studies may be aimed at identifying the conditions under which supervision can be optimized in blended working practices. As emphasized by M. Lee (2014), the main challenge of leading geographically dispersed teams may be to overcome communication barriers and pitfalls that can trip up, including information and knowledge sharing, virtual etiquette (e.g., tone and style), and conflict management. One of the key contingencies in this regard may be the motivational climate within the team. Specifically, workers with different achievement goals differ in the way they develop and maintain relationships at work (Sijbom, Janssen, & Van Yperen, 2015) and in their willingness to share information and knowledge (Poortvliet, Janssen, Van Yperen, & Van de Vliert, 2007). Meta-analyses show that both other-referenced performance-approach (PAP) goals (aiming at performing better than others) and self-referenced mastery-approach (MAP) goals (aiming at performing better than one did before) positively affect performance at work and in other domains (Van Yperen, Blaga, & Postmes, 2014, 2015). However, PAP goals and MAP goals likely activate different action plan goals, which are defined as strategies or pathways for achieving desired goals (DeShon & Gillespie, 2005). PAP goal individuals tend to perceive *negative interdependence* with others because their goal can be reached only at the cost of others, that is, by outperforming others. For example, PAP goal workers are likely to perceive and approach their supervisor as someone who frustrates their goal of outperforming others, and to feel superior vis-à-vis others, including their supervisor (Van Yperen, in press). In contrast, MAP goal workers tend to perceive and approach supervisors as valuable sources of work-related knowledge, information, and experience that potentially serve their goal of learning, growth, and development. In turn, supervisors may provide these intrinsically motivated workers with support, decision latitude, and freedom so that they can initiate, control, and carry out their tasks more autonomously. Hence, MAP workers and their supervisors are likely to count on each other for support and loyalty, share important resources, and base their exchange relationship on mutual

trust, respect, and obligation. For example, in a study of 170 workers from a Dutch energy supplier, Janssen and Van Yperen (2004) found that relative to PAp goal individuals, MAp goal individuals reported higher quality exchange relationships (i.e., more mutual trust and respect) with their supervisors.

Another interesting question is whether blended working can be learned (*cf.*, Greer & Payne, 2014), which might primarily be a function of workers' beliefs with regard to the malleability of relevant skills, attitudes, and psychological needs (Dweck, 1986). Most likely, workers can be trained to employ strategies for overcoming blended working challenges, including strategies to ensure accessibility of information and connectivity, to avoid distractions, to adopt a work-oriented mindset, and to plan and schedule one's working hours and tasks. On the other hand, our findings suggest that workers high in need for relatedness and structure, and low in need for autonomy perceive blended working as ineffective (Van Yperen et al., 2014). Hence, future studies may examine strategies that can render blended working practices suitable for those workers in particular.

Conclusion

The rapid advance of ever-improving ICT and computer technologies in modern societies provides a variety of opportunities to work, to learn, and to care for, among other things. These pervasive and booming trends in modern societies are referred to as *blended working* (e.g., Van Yperen et al., 2014), *blended learning* (e.g., Hew & Cheung, 2014; Owston, 2013), and *blended care* (e.g., Wilhelmsen et al., 2013). Blended working, the central concept in this chapter, combines on-site and off-site working at any time. We have shown that blended working has the potential to provide considerable benefits to both organizations and individual workers, but it is associated with serious drawbacks as well (see also Rice, 2017, Chapter 9 in this volume). Whether blended working works for workers seems to be a function of characteristics of both the worker (e.g., psychological needs, personality factors) and the environment (e.g., type of work, task interdependence, leadership style). By implication, blended working practices should not be seen as a "one-size-fits-all" issue (Van Yperen et al., 2014). For example, the perceived opportunity for blended working as an effective contemporary resource to cope with increasing job demands is relevant only to workers with a high need for autonomy at work (Van Yperen et al., 2016). Blended working seems particularly effective for specific groups such as caregivers, older workers, and workers with a physical disability (De Jonge et al., 2015; Van Yperen et al., 2014). Finally, based on Mayo et al. (2009), we have argued that blended working practices may be most effectively implemented in companies characterized by trust and cohesion, and in companies in which workers can be evaluated on the basis of their results. Given the rapid rate of improvements in ICT and computer technologies in modern societies provide opportunities for improving individual, organizational, and societal outcomes in ways that were not previously possible, both researchers and practitioners should develop and examine tailor-made strategies that can render blended working practices suitable for all workers.

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