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Flexwork, Work–Family Boundaries, and Information and Communication Technologies

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Introduction

Flexwork involves workers having a choice in time, location, and duration of work-related tasks (Hill et al., 2008). Organizations have increasingly offered, and employees have increasingly used, flexwork options owing to organizational, technological, social, economic, and legislative forces (Kossek & Michel, 2010). The trend toward more flexible work arrangements involves transformations of work, office design, and work locations (Cowan & Hoffman, 2007; Felstead, Jewson, & Walters, 2005). Information and communication technologies, largely operating through the Internet and now wireless transmission, both facilitate and shape flexwork. Most flexwork would be impossible without the use of information and communication technologies (ICTs), as they allow communication, collaboration, and use of resources across time, space, participants, and work–family boundaries. With this increase in the use and forms of flexwork come change in, and concerns about, boundaries, balance, and conflict between work, life, and family domains. Flexwork may benefit one domain while harming another, or require reconceptualization of behaviors and norms in one or more domains. Another primary shaper of and contributor to the rise of flexwork and associated work–family boundary, balance and conflict is the increasingly pervasive use of ICTs at work, home, and other times and places. ICTs play a central role in these developments and implications, but have not been much considered in the field of flexwork research.

Organizational and social science research has responded to these developments, especially flexwork. Online searches (ProQuest social science and Google Scholar) using combinations of flexwork terms, work–family balance terms, and ICTs indicate limited coverage of the *intersection* among these topics – little between flexwork terms and ICTs, or work–family balance terms and ICTs, and essentially none among all three. This chapter

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summarizes conceptual definitions and distinctions, influences, and outcomes (positive, negative, conditional) associated with flexwork, work–family boundaries, and ICTs, and their interrelationships. The chapter also provides a model of the overall interrelationships of these important and growing aspects of organizational work and life, and suggests key research questions at the intersection of these three areas.

Overall Relationships

We begin with a general summary model of overall relationships among the central topics of flexwork, work–family balance, and ICTs. Figure 9.1 portrays how the relationships emerged from the review, but is used here to introduce the review topics and their relationships. Many factors – whether required or voluntary, facilitators or obstacles, legislation or norms, financial or demographic – influence organizational and individual awareness of and interest in adopting flexwork. Flexwork is a general term representing a portfolio of possible variations in amount, time, location, and control of work. There are many aspects of offering organizational flexwork, from formal, organization-wide policies to informal and unequal supervisory allowance and restrictions. Thus the level, types, and implications of individual flexwork use are diverse, both conceptually and empirically distinct from formal offerings. Use of flexwork is associated with a wide array of positive and negative outcomes, at organizational, individual, family, and social levels. Some of these are mediated by the characteristics of flexworkers' work–family boundaries, the crossing of those boundaries, and conflict arising in either work or family domains. Communication about work and family domains influence the interpretation, experience, and outcomes of those boundary characteristics and crossings, and their relation to outcomes. Many relationships between flexwork use, boundaries, and outcomes are moderated or mediated by a wide range of individual, organizational, and family characteristics. Some potentially

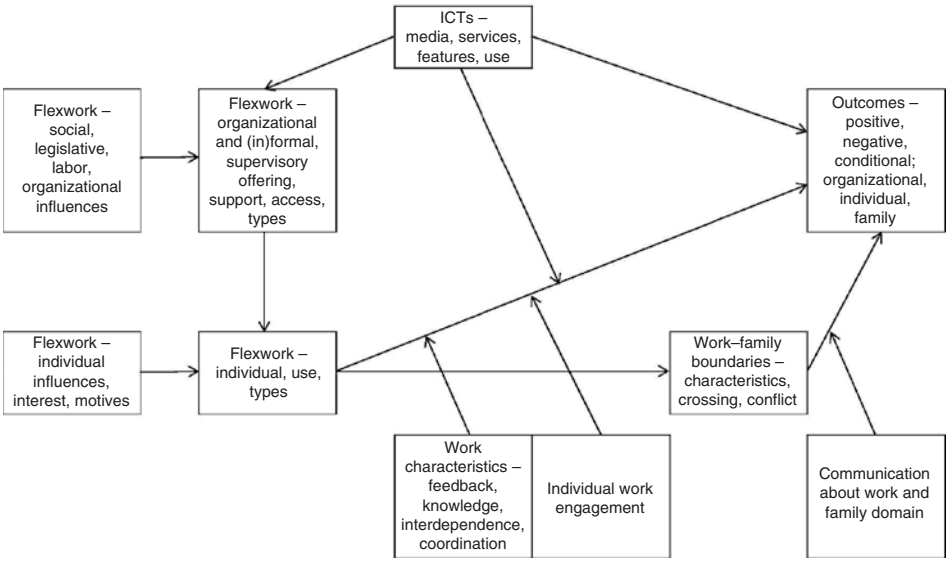

Figure 9.1 Overall model relating flexwork, work–family, boundaries, information and communication technologies, and outcomes.

relevant concepts affecting these relationships, such as work engagement, have not been much studied in the flexwork or boundary literature. Permeating all these concepts and relationships is the wide diversity, changing nature, and range of uses of ICTs – including infrastructure, devices, services, features, and extent of use. ICTs both enable, and affect the nature of, flexwork experience, work-family boundaries, and outcomes.

Flexwork

Flexwork or work flexibility includes flextime, part-time jobs, telecommuting/flexplace, job-sharing, compressed work weeks, unpaid personal leave, and sick leave for ill child care (Eaton, 2003). Related terms include, with variations in meaning, flexible work, flexibility in work, workplace flexibility, flexible work arrangements, or blended work. Van Yperen and Wörtler (2017, Chapter 8 in this volume), review related concepts, practices, and implications of blended working, involving the use of both multimedia and face-to-face communication and information sharing to engage in more or less seamless work across times and places. They discuss psychological and group needs, perceptions, and contexts, as well as organizational adoption of blended working.

Flexwork may also include telework or telecommuting, and thus is a more general concept. Telecommuting replaces at least some traveling to and from work, which occurs at a variety of home-based or nonhome-based contexts separate from the employee's supervisor (Mokhtarian, 1991). Telework may or not replace commuting; the US Telework Enhancement Act 2010 defines telework as:

> *a work flexibility arrangement under which an employee performs the duties and responsibilities of such employee's position, and other authorized activities, from an approved worksite other than the location from which the employee would otherwise work*
>
> US Office of Personnel Management
> (retrieved April 25, 2017 from www.opm.gov/FAQs, n.p.).

Kossek and Michel (2010) list four main categories of flexwork (with 14 more specific options): timing of work, location, amount and hours of work, and continuity/breaks. They also provide a comprehensive review of flexwork scheduling and associated outcomes. Matos and Galinsky (2014) list six general categories of flexwork (with 18 more specific options): flextime and place, choices in managing time, reduced time, caregiving leaves, time off, and flex careers. Their 2014 US National Study of Employers find that the options most commonly offered by organizations are: taking breaks (92% organizations offered this), time off for important family and personal needs (82%), and flextime (81%). These percentages are higher for smaller organizations (50–99 employees). Qualitative research by Cowan and Hoffman (2007) identified four valued categories of flexwork: time (e.g., scheduling, modifying work schedule to meet life demands), space (e.g., home, variation in preferences for permeability), evaluation (e.g., time at work, quality of results), and compensation (e.g., financial, time, overload).

Flexwork offering, use, and interest

The formal organizational offering of flexwork is just one component of the meaning of "flexwork" in practice. "Flexwork" includes what is formally provided or offered by organizations, what is offered to different employees, what is supported by managers/supervisors and organizational culture, and what is perceived and actually used by employees

(Eaton, 2003). The main distinction is between what is offered by the organization or supervisor and what is used by individuals.

A 2008 survey of US organizations with at least 50 employees found a range of flexible work arrangements, from flexible schedules (79%) to job-shares (29%) (Galinsky, Bond, & Sakai, 2008). The 2010 US Census Bureau's Survey of Income and Program Participation reported 6.6% employees worked exclusively from home on their primary job and 9.5% at least one day a week (Mateyka, Rapino, & Landivar, 2012). The Flexible Work Arrangements Factsheet (2010) reported that close to 29% of full-time employees used flexible work schedules, though only 38.8% of those participated in formal programs, meaning that a majority of those organizations offered flexwork informally or on an individual basis. Based on a 2014 web survey of 400 000 US federal employees (46.8% response) (US Office of Personnel Management, 2016), 29% of the sample participated in telework, although only 4% did so three or more days per week, 10% for one or two days per week, 4% no more than one or two days per month, and the remaining 11% did so infrequently or on an unscheduled basis. Beyond the 29% participating, 13% chose not to telework, and the remaining 57% did not telework due to barriers. Distinct from telework, alternative work schedules were used by a third, with 22% reporting that the option was not available to them.

Matos and Galinsky's (2014) report on a U.S. representative sample of 1,051 employers with 50 or more employees provides a recent and comprehensive summary of flexible work offerings, trends, and options. They describe increases in job flexibility in general, including options such as working remotely occasionally, increasing from 50% in 2008 to 67% in 2014, and control over overtime, up from 27% to 45%. On the other hand, provisions allowing extended time away from work largely saw declines, including practices such as job-sharing, down from 29% to 18%, and career breaks for personal and family responsibilities, down from 64% to 52%.

The Australian Public Service Commission (2013) update summarizes several government and industry reports. Overall, demand for more flexible work arrangements was growing in 2012. About 16% of respondents (working adults) to the fifth (2012) Australian Work and Life Index (Skinner, Hutchinson, & Pocock, 2012) worked at home on a regular basis; 44.2% worked at home sometimes (regularly or not). The eighth Household, Income and Labour Dynamics in Australia Survey (2010) indicated 22.8% worked at least some hours of their main job at home each week, with over 70% working fewer than 10 hours at home each work. Only 4.9% of all employed workers worked most of their time at home, and only 22.6% of those were employees as opposed to being self-employed. Hence current overall percentages of hours worked at home are low.

Flexwork is relevant to many employees. In 2010, an average of only 30.1% of employees in the European Union (EU) felt that their working hours fit their family/social commitments very well (Hoonakker, 2014). According to the Flexible Work Arrangements Factsheet (2010), 80% of US workers indicated preferences for more flexible work options, particularly if these options were not associated with negative implications at work. Of the 89% of workers who did not currently have any regular home workhours, 43% indicated they would like the option. In a 2000 EU survey, employee interest in telecommuting was also higher than employer interest (Peters, Tijdens, & Wetzels, 2004). And such programs are popular: of the 33% participating in them in the US Office of Personnel Management survey (2016), 89% reported they were satisfied with the alternative work schedules. A whitepaper on the Australian national broadband network documented that 60% of mature workers in that study felt they would move to telework and thus delay retirement, with 6% even willing to find such work in a new industry. Similarly, 62% of part-time and casual workers would accept telework if available (Australian Public Service Commission 2013).

Organizational and individual influences on flexwork

Influences on organizational offering of flexwork include characteristics of management, workforce, and organizations; organizational work–family culture; and supervisor support (McNamara, Pitt-Catsouphes, Brown, & Matz-Costa, 2012). Flexwork programs are often underused, partially due to organizational factors such as the nature of supervisory support, family-supportive culture, and reward systems (Batt & Valcour, 2003). Family support policy availability signals organizational concern, but actual use seems to be more influenced by personal interests and needs (Butts, Casper, & Yang, 2013).

Individual predictors of choice to use flexwork arrangements include longer tenure, supervisory responsibilities, and co-workers who used these arrangements (Lambert, Marler, & Gueutal, 2008). In the 2007–2008 Age and Generations Study, individual influences on access to and use of flexwork options (varying by program) included being a minority, female or disadvantaged individual, more education, and type of occupation (McNamara et al., 2012). For example, considering the temporal dimension of flexwork, on the one hand, workers in computer and math occupations were more likely to report using atypical schedules, compressed work weeks, or control when they took breaks. Management, on the other hand, was less likely to report occasional changes in when they started or quitted work.

Employees may be reluctant to use flexwork options out of concern for the effect on organizational support (Long, Kuang, & Buzzanell, 2013), careers (Hylmö & Buzzanell, 2002), performance evaluations and wages, and the "flexibility stigma" (Williams, Blair-Loy, & Berdahl, 2013). Some employees lack interest in or need for particular offerings (McNamara et al., 2012). Shockley and Allen (2010) concluded that need for role segmentation reduced flexwork use, while the relationship between need for achievement and flextime use was slightly strengthened by having greater family responsibility (i.e., children). Thus organizational options for and employees' actual use of flexwork are often weakly correlated.

Flexwork and telecommuting are not equally attractive to all job seekers. Rau and Hyland's (2002) survey showed that those with higher work–family role conflict were more attracted to organizations offering flexwork than to those providing telecommuting. But job seekers with lower work–family role conflict were drawn more to organizations with telecommuting options, presumably because it involves lower transition costs and fewer out-of-role interruptions. A more subtle influence on flexwork offering and use involves discourses about and contradictions associated with "organizational policies and arrangements; workplace norms and practices; worker-supervisor relationships; and an individual's sense of agency" (Myers, Gailliard, & Putnam, 2012, p. 195). For example, mixed messages about flexwork, flexibility stigma, discrepancies between formal and informal access and use, wide variation in supervisory implementation, and diverse definitions of flexwork, all foster uncertainty and additional stress and conflict.

Outcomes associated with flexwork

Positive general outcomes associated with flexwork Flexwork can provide many benefits, including improved health and work–family balance, worker engagement, commitment, attachment, and lower absenteeism (see McNamara et al., 2012, for a review; for recent meta-analyses, see Gajendran & Harrison, 2007; Kossek, Pichler, Bodner, & Hammer, 2011). Flexwork is associated with increased (self-perceived) performance and decreased turnover, via increased affective commitment (loyalty and willingness to contribute) or citizenship behavior (Eaton, 2003). Work and family programs may help attract top workers, reduce work–family conflicts, increase peak productivity hours, increase commitment and motivation, more balanced use of organizational resources,

decrease supervision/monitoring, and reduce absenteeism and turnover (Clifton & Shephard, 2004). Availability, and to less of an extent reported use, of work–family support policies are positively related to job satisfaction, affective commitment, and lower intentions to leave. These variables have a small influence on attitudes toward work – primarily as mediated by perceptions of those policies and by work–family conflict (Butts et al., 2013). Increased employer support of flexible and permeable work boundaries is associated with a variety of organizational benefits in terms of employee trust, commitment, satisfaction, attitudes, etc. (Scholarios & Marks, 2004).

Considering some studies on telework and telecommuting specifically, telework can increase job flexibility, allowing greater work–life balance, such as caring for dependents, balancing competing demands, improving relationships, and managing time (Gajendran & Harrison, 2007; Hilbrecht, Shaw, Johnson, & Andrey, 2008). Other potential benefits of telework include better work–family balance, lower travel and office costs, more opportunities for disabled workers, increased job performance, reduced sick days, and reduced air pollution (Wadsworth, Facer, & Arbon, 2010). Telework/telecommuting is positively associated with job satisfaction and performance (Bloom, Liang, Roberts, & Ying, 2013). One meta-analysis found a negative correlation between telecommuting and intention to leave (Gajendran & Harrison, 2007). However, a large-sample government survey of teleworking in US federal government agencies found no relationship between telecommuting and workers' turnover intentions, although employees working in agencies that denied this option reported higher turnover intention (Cailier, 2013).

Positive conditional outcomes associated with flexwork Leslie, Park, and Mehng (2012) discussed how the effects of flexwork on employee career success are influenced by the motivations managers attribute to the use of flexwork by employees: as a signal of commitment or of personal life management. If managers attribute use of flexwork as motivated by productivity, they perceived greater organizational commitment, generating a positive effect on employee rewards. However, the managerial attributions of employees' motivations were not correlated with the employees' own reported motivations. Thus both perceived and communicated motivations influence both flexwork offering and interpretations.

The type of flexwork location also matters. Morganson, Major, and Oborn (2010) discovered slightly greater work–family balance and job satisfaction among main office and home-based workers compared with those working from a satellite office or at a client's location, and also greater workplace inclusion in the main office. New work locations also involve issues of control and adaptation. In the context of open/office/open plan trends, managerial control of workspace affects employees' physical and psychological discomfort, and lowers organizational identification (because individuals' interests are constrained). Both these factors fully mediate the relationships between control and job satisfaction and wellbeing (Knight & Haslam, 2010).

Negative general outcomes associated with flexwork Flexwork programs raise issues of cost (insurance, productivity), labor force composition, equity for those without families, reduced salary compensation, uncertainty about actual organizational benefits, and intrusion into the worker's life (Clifton & Shephard, 2004). Flexwork options can increase isolation from the office environment and face-to-face interaction, thus lowering the valued job characteristic of task interdependence (Feldman & Gainey, 1997) as well as a sense of organizational affiliation (Morganson, Major, & Oborn, 2010). Although some meta-analyses demonstrate a relationship between flexwork and work–family conflict (Mesmer-Magnus & Viswesvaran, 2006), other studies do not (Gajendran & Harrison 2007; Golden, Veiga, & Simsek, 2006) (T. D. Golden, 2012).

One theoretical basis of flexwork is the need to balance energy and work exhaustion through resource recovery opportunities (Hobfoll, 1989). Applying this perspective, T. D. Golden (2012) found no direct effects of telework on exhaustion, but it did weakly increase the influence of time and strain-based work–family conflict, and strain-based family-to-work conflict, on exhaustion during regular and nonregular office hours. Another cost of telework includes stressful interruptions, which reduce organizational identification (Fonner & Roloff, 2012). Telework/telecommuting can generate role ambiguity, work–family spillover, lower control over planning and resources, isolation, and less feedback and support (Bloom et al., 2013).

Negative conditional outcomes associated with flexwork Rothbard, Phillips, and Dumas (2005) report that more access to integrating flexwork policies was negatively associated with, but more access to segmenting policies was positively related to, outcomes such as job satisfaction and organizational commitment, for those with a greater preference for role segmentation between work and family. Schieman and Glavin's (2008) analysis of the 2002–2003 US National Survey of the Changing Workforce (adult paid workers), showed that job attributes moderated the relationship between having work-related contact outside of working hours, and bringing work home, and work-to-home conflict. With low job autonomy, contact increased conflict; with more schedule control, bringing work home increased conflict. Thus autonomy and schedule control can be thought of as either resources or demands, affecting boundary blurring and conflict.

Flexworkers may have to continually reorder, perform, and reconceptualize their spatial and social relations both at work and at home. Richardson and McKenna (2014) describe how new flexworkers had to develop different within-home spatial and temporal boundaries. They needed to become better organized, and learn how to match tasks to places. They also became aware of the negative impact of distance on employee–manager trust, so had to display trustworthiness and make accomplishments more public. Relationships with work colleagues also changed. For example, flexworkers had to plan more intentionally to meet, interact with, and be seen by, co-workers in the physical office, to compensate for missing important and spontaneous interactions as well as to access needed information.

Summary

There are many forms of flexwork, grouped in various categories, but all fundamentally involve choices in time, duration, location, and continuity. They are also crucial distinctions between what organizations formally offer, what supervisors formally and informally offer or allow, what workers desire or prefer, and what workers actually use. And each of those forms of flexwork has both common and unique influences, at different levels (from legislative and occupation to supervisor assumptions, nature of the job, and employee concerns about career and work–family pressures). Flexwork may foster both positive and negative outcomes related to performance, hiring and retention, stress, and work–life balance. These relationships are typically moderated by other factors, such as motivations, preference, location, and organizational norms.

Work–Family Boundaries

During the industrial revolution, work became defined as organizational employment, and family life and work became segmented, with different cultures (Morf, 1989). However, today work and family activities increasingly cross the boundaries between each domain (Zedeck, 1992). This blurring of boundaries is due to many factors, including: policy and

legislation, longer work hours, increased numbers of working women and single parents, an aging population (Kossek & Michel, 2010; Kossek & Ozeki, 1998; Martins, Eddleston, & Veiga, 2002), new organizational forms, such as increasing work–family role flexibility (Kossek & Michel, 2010); the use of multiple ICTs for work outside of the formal organization (Kossek & Lautsch, 2008) and part-time work; and increasing mobility as well as growing concern for nonwork life (Kossek & Michel, 2010).

Our focus here is on flexwork-related crossing and blurring of work–family boundaries. Managing this changing interrelationship between work and family is challenging for the organization, the employee, and the employee's family. Border and boundary theory in general (Michaelsen & Johnson, 1997; Nippert-Eng, 1996b) presume that institutions and individuals develop boundaries to simplify, organize, and give meaning to their domains. Boundaries have two distinct aspects: *flexibility* (ability to perform work outside of typical time and space constraints), and *permeability* (the extent one domain intrudes on the other, and how boundaries may expand or contract in response to these demands) (Hall & Richter, 1988). Flexibility and permeability not only make crossing boundaries easier but also blur boundaries, such as by bringing work home, or engaging in family communication at work. Organizational policies (e.g., flexwork) and climate affect boundary flexibility and permeability (Ashforth & Fried, 1988).

Many factors influence one's preference for and outcomes of work–family balance: individual characteristics, home and work social influence, meanings of work and family, organizational policies, work scheduling, support from other actors, and person–environment fit (affected by the nature of the boundary work) (Desrochers, Hilton, & Larwood, 2005). Boundary characteristics and individual preferences affect work–family boundary management styles (integrator, separator, alternating), and subsequent outcomes, such as inter-role conflict and stress (Kossek & Lautsch, 2012). Organizational context (more or less supportive) also moderates the relationship between boundary management style and work–family conflict.

Work–Family boundary crossing

According to work–family border theory (Clark, 2000), people daily cross borders between work, family and life domains, and interpret and shape those boundaries. Primary work-related transitions are between home and work, within work, and between work and "third places" (Hall & Richter, 1988). This spillover can be symmetric or asymmetric, sequential or simultaneous, creating both positive (job satisfaction) and negative (job stress) implications, or positive implications for one domain and negative implications for the other. Thus transitions across roles, ranging from highly segmented to highly integrated, can involve crossing boundaries with high or low flexibility and high or low permeability, and are associated with various benefits and costs (Ashforth, Kreiner, & Fugate, 2000).

This boundary-crossing affects work–family balance, and people may have different levels of support and communication about boundary-crossing issues. Because of daily boundary crossing, individuals need to manage the boundaries between and transitions across their domains and roles (e.g., home, work, school). This includes trying to balance each domain's demands, thereby reducing interference and conflict across the domains (Clark, 2000). Individuals may attempt to compensate in one domain for missing elements in the other (Staines, 1980). "Border crossers" proactively attempt to balance their work and family domains (Clark, 2000), across physical, temporal, and psychological boundaries, which vary in flexibility and permeability. Integrated role boundaries reduce the impact of interruptions, but require more boundary work (Rau & Hyland, 2002).

Individuals vary in their preferences for boundary crossing (flexibility, permeability, extent of symmetry in blurring; the fit between boundary strengths and preferences affects role conflict), and for role integration or role segmentation across either work-to-family or family-to-work boundaries (Nippert-Eng 1996a, 1996b). Individuals try to maintain order around a role by applying their own style of boundary management (Nippert-Eng, 1996a). Combinations of permeability and flexibility generate segmented or integrated styles (Bulger, Matthews, & Hoffman, 2007). Kossek and Lautsch (2008) introduced a third style, in which an individual alternates between the segmented and integrated styles. They also differ in the centrality of their work–family identities, and their experience of organizational support for work–family customization (Kossek & Lautsch, 2012; Kossek, Lautsch, & Eaton, 2005; Rothbard et al., 2005). In Hecht and Allen's (2009) study, greater home boundary strength was associated with role identification, while greater home as well as work boundary strengths was related to less work–family role conflict. High integration among roles and domains foster an encompassing identity, easier boundary transitions, and decreased negative affect related to interruptions. They also increase role blurring and diverse demands. Strong role identification may make role entry easier but it makes role exiting harder. Individuals also vary in their *interpretations* of their boundaries and the transitions. For example, a long commute may provide a valuable buffer between home and work roles for some people (Hall, 1990) but seriously degrade quality of life for others.

Employees attempt to manage their experienced boundary permeability and work-family balance through "enactment" of their environment, over which they have varying control and choice (Weick, 1979). Individuals accomplish these boundary characteristics through communication with supervisors, fellow workers, and family members to create the meaning of this enactment. Particularly important is "across-the-border" communication with members of one domain about their other domain (e.g., work–family, or family–work). Thus work–family boundaries are partially constituted through communication (Cowan & Hoffman, 2007). More supportive organizational culture, members' more positive perceptions of empowerment, and greater boundary permeability and flexibility, all increase cross-boundary communication.

This communication may be about *obligations* (e.g., scheduling, task requirements) or *understood meaningful* experience (e.g., the value of the work or family domain) (Clark, 2002). This communication is necessary to help others understand the boundary crosser's experience and meaning of the other domain (e.g., work-to-family and family-to-work) (Clark, 2002). In turn, this understanding can improve the negotiation of and adaptation to these crossings, and reduce role conflict and improve work–family balance. Clark's (2002) survey analysis concluded that such communication did vary by permeability of the boundaries, and did improve work satisfaction and functioning, and home and family activity satisfaction and functioning. In particular, interpersonal relationships were most important in cross-boundary communication, and communicating about domains as understood meaningful experience was influential, though communicating about domains as obligations was not.

Outcomes associated with work–family boundaries

Work–family integration can have positive or negative implications, depending on preference and context when not working in the office (Ahrentzen, 1990). For example, greater work–family integration and boundary blurring were related to more hours worked, distractions at home, and work–family conflict in Desrochers and colleagues' (2005) study. As a positive example, with some work at home, work–family conflict is lower with more bounded home work spaces (physical, behavioral, temporal, or social).

More directional boundary management can reduce directional interference, and thus lessen associated negative outcomes (Ashforth et al., 2000). The extent of formalization or rituals of transitions across roles and boundaries (such as explicit scheduling, or closing a home office door at the beginning of work) also moderates the relationship between some work at home and conflict.

Greater home boundary flexibility, and greater work boundary permeability, were both associated with more home communication about work in Clark's (2002) study. But greater work boundary permeability was negatively associated with work communication about family, and work boundary flexibility was not associated with communication across either domain. The least conflict arose from boundaries with high flexibility and low permeability (implying an underlying dimension of individual choice), but that relationship was moderated by work–family preferences.

Flexwork increases the likelihood of more frequent boundary crossing and more flexible and permeable boundaries (Clark, 2000). Some flexwork arrangements (in particular, flextime and compressed workweeks) have been associated with less work–family conflict, more work–family balance, less absenteeism, and better organizational outcomes (Baltes, Briggs, Huff, Wright, & Neuman, 1999). A survey of Hong Kong office workers showed that with greater work flexibility came less work spillover into home, home spillover into work, or job burnout. Work spillover into the home was a stronger significant influence on job burnout than was the significant effect of family spillover into work (Leung, 2011).

Flexwork and telecommuting offer different attributes relative to boundary management. Rau and Hyland (2002) found that flexwork allows less permeable boundaries, mid-range boundary flexibility, and greater role contrast. Telecommuting, however, supports more permeable and flexible boundaries, less role contrast, and easier role transitions.

ICTs, Flexwork, and Work–Family Boundaries

ICTs is a very general term. In management, information systems, and business research, it usually refers to more enterprise-level computer systems used to process, network, and distribute data, information, and communication content, both within and across people, units, and organizations. In research emphasizing the communication aspect ICTs can include any medium, from traditional radio and television through to cell phones and network infrastructure. Even more focused is the reference of ICTs to media, features, and services involving computers, digitization, and networking that support communication and knowledge sharing at various levels from dyadic to group and from within or across organizational boundaries. ICTs may be distinguished by their technological and software components, uses, and features, attributes or affordances (Faraj & Azad, 2012), such as searching, retrieving, and communicating. For example, ICTs now include "social media" (which are not a specific medium or device). The diffusion, capabilities, scale, scope, uses, roles and implications of ICTs in organizations are vast and continually evolving and being adapted (Rice & Leonardi, 2013). Thus there is no stable or comprehensive list of ICTs.

Our work, personal, and family lives and practices are embedded in, and mediated through, ICT infrastructures and use (Brynjolfsson & McAfee, 2011; Rainie, Wellman, & Chen, 2012). ICT use in general is positively associated with autonomy, skill variety, career opportunities, increased job mobility, and improved technology skills (Bloom et al., 2013). ICT use can provide more resources and communication for accomplishing work and improving the results from invested time and effort (Kubicek, Korunka, Paskvan, Prem, & Gerdenitsch, 2014). Furthermore, ICT use is constituted through

social interaction in social contexts (Chesley, Siibak, & Wajcman, 2013). ICTs not only reshape the nature and networks of organizational communication, but also job conditions (Chesley, 2014).

Use of ICTs, flexwork, and work–family boundaries

Most flexwork would be impossible without the use of ICTs, as they allow communication, collaboration, and use of resources, across time, space, participants, and work–family boundaries. Influences on using ICTs after and outside of work include organizational provision of devices, and co-worker/organizational connectivity norms. Some other factors are how well media attributes fit with individual and work characteristics (Richardson & Benbunan-Fich, 2011). Because employees differ in their preferences for and experiences of boundary strength, their use of communication in general and ICTs in particular to manage these boundaries also likely varies (Park & Jex, 2011). Workers with greater affective attachment to their organization (related to organization identification, job involvement, and work engagement), are more likely to use media to extend their work after hours (Boswell & Olson-Buchanan, 2007).

Valcour and Hunter (2008) reviewed the influences and moderators (including macro and historical) associated with ICTs and work–family integration. Employees and their family members, through their work–family boundary-spanning practices and values, may use, adapt, and enact rules and resources for ICTs to reduce the asymmetry between work-to-family and family-to-work intrusions (Kennedy & Wellman, 2007). Such uses include contributing to organizational goals through home ICT use, and managing family interaction while at work (A. G. Golden, 2012). The initial organizational and family rules for ICTs use and resources (ICTs and knowledge about them) are adapted through interaction, communication, and practice within communities of users (A. G. Golden, 2012; Orlikowski, 2000). A. G. Golden's (2012) qualitative study identified three categories of ICT rules or structures in flexwork conditions: technology and tasks, spatial-social (where work is performed), and temporal-social (when work is performed, including whether family members are present or absent).

Outcomes associated with ICTs in flexwork and work–family boundaries

One of the paradoxes of ICTs for flexwork is that while the pervasiveness and use place more demands on workers and intensify the pace, stress, and even insecurity of work (Chesley, 2014), use of ICTs also reduces constraints on time, space, social interaction, and knowledge. Thus we see a variety of both positive and negative outcomes associated with ICTs and flexwork and work–family boundaries.

Positive outcomes associated with ICTs in flexwork ICTs can allow more flexibility at work or at home (Gajendran & Harrison, 2007). They can help integrate multiple work and nonwork roles by allowing balance, flexibility, and access, and by increasing autonomy and ability to accomplish tasks (Valcour & Hunter, 2008). ICT use can help balance work and home roles (Voydanoff, 2005) and facilitate greater work–family integration (Batt & Valcour, 2003). Positive aspects of household ICT use for work in Frissen's (2000) study included better organizing, increased flexibility and control, mobility, interactivity, time saving, ability to recover and improvise from changes, and being accessible to others. Considering telework and telecommuting specifically, benefits of teleworkers' use of ICTs include greater social presence and thus a greater sense of connectivity (Fonner & Roloff, 2012). Using cellular devices for telework helps workers manage integration and

the work–family boundary (Kreiner, Hollensbe, & Sheep, 2009). A 2008 US national-level Pew survey showed that networked work (teamwork, telework, and other ICT use at work and outside of work) was associated with greater job decision latitude (skill development, job autonomy) (Chen & McDonald, 2015; Rainie et al., 2012).

Negative outcomes associated with ICTs in flexwork Disadvantages of using ICTs in flexwork include worker isolation, less organizational visibility, fewer rewards and face-to-face interactions, less observability by management, reduced control of important information, less teamwork, increased safety issues, and greater stress, burnout, and intention to leave (Ayyagari, Grover, & Purvis, 2011; Kaufman-Scarborough, 2006; Valcour & Hunter, 2008; Wadsworth et al., 2010). ICT use can foster greater workload, multitasking, poorer work environment, and stress (Bloom et al., 2013). Other negative aspects of ICTs include more demands on one's time, reduced flexibility and control, overload, invasion of home privacy, and pressure to always connect and respond (Frissen, 2000). Such pressures include excessive "workplace connectivity" (Schlosser, 2002), or a sense of always being "on call" (Tarafdar, Tu, Ragu-Nathan, & Ragu-Nathan, 2007).

ICT use can blur boundaries by presenting yet another job demand (Voydanoff, 2005), with intrusion of nonwork life by work life (Bloom et al., 2013), creating obligations of connectedness, reduced resources for home life, and increased work–family conflict (Valcour & Hunter, 2008). Several studies have considered the influence of mobile media on work–family boundary blurring, mostly finding negative effects (e.g., Chesley, 2005; Fenner & Renn, 2010; Kreiner et al., 2009). Hislop and Axtell (2011) noted that engineers who spent much time travelling to or working with external clients used their cell phones to manage work dependencies as well as the work/nonwork boundary. In the process, however, blurred and often unclear boundaries were created. Workers with greater job involvement and ambition are slightly more likely to use ICTs outside work hours, but that usage also creates slightly more work–family conflict, from both the employee's and the significant other's perspective (Boswell & Olson-Buchanan, 2007). About half of a US national sample agreed that using ICTs increased their stress and work–family boundary blurring and conflict (Fenner & Renn, 2010; Madden & Jones, 2008). Telework can harm work–family balance, by increasing work–family boundary permeability, total hours worked, and stress (Russell, O'Connell, & McGinnity, 2009).

Conditional outcomes associated with ICTs in flexwork and work–family boundaries ICT use is associated with both positive and negative outcomes in relation to work–family boundaries. These occur within varied contexts, moderators and mediators, such as managerial goals, labor power, organizational culture and supervisory support, institutional environment, occupations, need for coordination and interdependency, task requirements, job demands and resources, and individual and family characteristics (Valcour & Hunter, 2008). For example, employees with higher job satisfaction have indicated a positive assessment of use of Internet for accomplishing work-related tasks, and a more permeable family boundary and flexible work boundary (Leung, 2011). Those with lower job satisfaction reported greater work spillover and burnout. But higher family satisfaction was predicted by greater dependency on the Internet, less home permeability and more home flexibility. Thus to some extent job and family satisfaction compete with each other. Individuals with higher role identification (Ashforth et al., 2000) are more likely to broaden the boundary into or from the home domain, partially by reducing constraints on using ICTs for work purposes at home. Some of the telework/telecommuting outcomes vary by the type of work, with more positive implications for more professional workers (Bloom et al., 2013).

Park and Jex (2011) concluded that developing boundaries for using ICTs in cross-role activities mediated the influence of individual factors on work–family interference, differently for preference in each direction of boundary-crossing between work and family. And, those with higher work-role identification experienced more work-to-family interference. A study of employees from over 30 companies showed that while more use of work-related ICT outside of regular hours was associated with increased work–family conflict, more positive attitudes toward such ICT use decreased that conflict (Wright et al., 2014). Some of the negative implications of using ICTs to work at home can be moderated by time management strategies (Fenner & Renn, 2010). Thus, attitudes, type of flexwork, and the characteristics of boundaries interact in their influence on ICT outcomes.

Summary

Flexwork and ICTs are inextricably related. The term ICTs covers a wide range of systems, devices, and technologies. Of more conceptual importance are their capabilities, affordances, uses, roles, and implications. ICTs can provide job resources, fostering greater work–family flexibility and permeability, and allowing for more control over work and family demands. Yet they also can create more demands, fragmentation and interruptions, isolation, and work–family conflict. Some of these relationships are moderated by factors such as organizational and managerial goals, the nature of one's work, and boundary preferences.

Future Research

Each of the three main topics – flexwork, work–family boundaries, and ICTs – much less their intersections, could easily justify their own chapter or even book (as many of the references here reflect). Thus, due to space constraints, there are multiple limitations to the scope and depth of this review. Each of those limitations thereby provides opportunities for more detailed and nuanced reviews, research, and analyses.

Even though the initial search for the review included over 150 articles, because the literature in each of these areas is immense, the coverage here cannot be comprehensive. Researchers in each of these areas will easily identify other materials they might consider central. However, the goal was to identify and integrate concepts, theory and results representing the fundamental issues and relationships. For more detailed and comprehensive empirical results, see the referenced reviews and meta-analyses (e.g., Gajendran & Harrison, 2007; Kossek et al., 2011; McNamara et al., 2012).

This review has distinguished between the two basic contexts of flexwork – options offered by the organization, and those actually supported by supervisors and used by employees. Thus Figure 9.1 does not include a direct relationship between organizational offering and outcomes, because it is employee access and use that is associated with work–family boundary crossing, and most outcomes. However, while this review summarizes several typologies of flexwork, it does not segment results and relationships by any of the several general and detailed typologies of flexwork (e.g., Kossek & Michel, 2010; Matos & Galinsky, 2014). Given vagaries in what flexwork is, it would be a significant research challenge to develop a framework clearly linking relationships and outcomes to specific offered, supported, used, and interpreted flexwork types. A similar limitation and research opportunity applies to the access and use of types of ICTs. Different media, devices, features or affordances, and variations in use are likely to relate to different forms of flexwork, work–family boundary crossing, and outcomes. Some of the studies referenced here refer

to specific devices (cell phones), services (email), or features (asynchronicity), while others refer to ICTs in general. The media affordance literature, in particular, argues against any particular technology having a particular effect. Instead, outcomes might be best associated with the opportunities for action that a (or category of) technology (texting, audio, group support) affords (e.g., pervasive awareness, searchability, mobility), within a given context (e.g., task, unit, organization, family; type of flexwork), in relation to agents' needs (knowing who knows what, obtaining answers to questions, minimizing interruptions) (Faraj, & Azad, 2012; Majchrzak & Markus, 2013). Also relevant is the portfolio of ICTs employees can use, including those provided or required by the organization, and those preferred and actually used by the employee. Thus, more specific syntheses would identify and interpret variations in relationships by ICT type, affordance, and use context.

Because there is little work on the role of communication on work–family boundary management and crossing (Clark, 2002), and related work–family conflict, this area provides good opportunities for assessing the role of ICTs. For example, does communicating about obligations or understood meaningful experiences, across work–family boundaries with varying permeability or flexibility, using different media (e.g., face-to-face, cell phone, social media) have different influences on outcomes such as work satisfaction or work–family conflict?

A rich opportunity for extending research into the relationships among flexwork, work–family boundaries, and ICTs would be including the work engagement concept and job resources and demands theory. Bakker, Schaufeli, Leiter and Taris (2008) define work engagement as a *motivational state* of work-related wellbeing consisting of vigor (energy), dedication (identification with work), and absorption (concentrated and positively immersed in work). "Engaged workers are more creative, more productive, and more willing to go the extra mile" (Bakker & Demerouti, 2008, p. 209). The primary work engagement antecedents are *job demands* (job features requiring costs, strain) and *resources* (job features functional to achieving work goals, reducing costs, allowing development) (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). Increasing one's work engagement facilitates the development and use of more task, social, and personal resources, which then enhance more work engagement, a gain spiral (Hobfoll, 2002). However, the opposite loss spiral may also occur. Thus greater work engagement may foster greater employee interest in flexwork, by fostering greater interest in and energy for working in new contexts. However, flexwork and associated ICT use, depending on whether they create more job resources (control over time, place, and amount of work) or job demands (interruptions, supervisory devaluation, work–family conflict), could strengthen or weaken work engagement. A study of health workers showed that greater work engagement was associated with less work-to-family conflict (Mauno, Kinnunen, & Ruokolainen, 2007). So far, however, little research has applied work engagement to flexwork and ICT contexts.

Conclusion

Work and family (more generally, nonwork life) provide the two major social contexts. Thus new developments in the nature of work (here, flexwork) and associated relationships between work and family (here, work–family boundaries) as well as in means for interacting and communicating within and across those domains (here, ICTs) are significant topics for individuals and organizations, for managers and researchers alike.

This literature review identifies several primary conclusions about research on, and across, these three topics. Flexwork is increasing, and includes a wide variety of options. Flexwork offering, meaning, use, and outcomes are influenced by legislative, organizational, supervisor, and individual factors. Flexwork may be associated with a variety of

positive outcomes, such as better work–family balance, and performance. Flexwork can blur work–family boundaries, with both positive and negative consequences. Work and family boundaries vary in permeability and flexibility. But flexwork can also increase boundary crossing, and boundary flexibility and permeability, generating more work–family conflict. Communication about, and across, work-to-family and family-to-work domain boundaries both enacts these boundaries as well as influences work–family conflict. ICT use in flexwork has both positive and negative effects on boundaries, and those relationships are often moderated by work characteristics, and organizational and supervisory support for flexwork. ICT use and work characteristics may moderate some relationships between flexwork, boundary characteristics, and work–family conflict.

Clearly the interrelationships among flexwork, work–family boundaries, ICTs, and organizational and work–family outcomes provide not only a more integrated context for understanding the nature and outcomes of flexwork, but also provide useful, intriguing, and challenging opportunities for management, employees, consultants, and researchers.

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