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Supervisory approaches and paradoxes in managing telecommuting implementation

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ABSTRACT   Voluntary telecommuting is an increasingly prevalent flexible work practice, typically offered to assist employees with managing work–family demands. Most organizations with telecommuting policies rely on supervisor discretion regarding policy access and implementation in their department. Although supervisors' approaches have implications for telecommuters and their non-telecommuting co-workers, few studies integrate these stakeholder perspectives. Drawing on surveys and interviews with 90 dyads of supervisors and subordinates, some of whom were telecommuters and some of whom were not, we examine effective managerial approaches regarding telecommuting implementation. First, supervisors should stay in close contact with telecommuters, but this contact should emphasize sharing information rather than close monitoring of work schedules. Telecommuters supervised with an information-sharing approach were more likely to report lower work–family conflict, increased performance, and were more likely to help co-workers. Second, supervisors should encourage telecommuting employees to separate work and family boundaries, which is related to lower work–family conflict. However, supervisors face a paradox as a separation approach can negatively affect workgroup relations: telecommuters who are encouraged to create boundaries between work and family were less likely to extend themselves in crunch times or after hours to help their colleagues. Non-telecommuters' workload and work–family conflict may increase as a result.

Telecommuting is becoming increasingly common in organizations, especially as a means of helping employees to achieve improved work–family relationships (SHRM Foundation, 2001). Most organizations with voluntary telecommuting policies rely on supervisor discretion regarding policy access and implementation. Telecommuting, which is also known as remote work, homework, virtual work, telework or distributed work (Belanger & Collins, 1998), is work that occurs outside of a traditional office setting, but that is connected to it via telecommunications or computer technology (Nilles, 1998). The US Census Bureau (2002) reports that 15 percent of employed persons now telecommute, working from home at least once per week.

Although supervisors' approaches to implementing telecommuting have implications for telecommuters and non-telecommuters who work together, few studies integrate these stakeholder perspectives. Greater knowledge is needed about how to manage this new way of working, particularly in blended workgroups comprising both telecommuting and non-telecommuting employees. In many firms, supervisors' managerial approaches and work scheduling practices may be out of date because most were developed decades ago based on the belief that workers would have homogeneous office schedules, little or no non-work responsibilities, and would be mostly subject to face-to-face supervision (Kossek, 2005). The advent of telework challenges these assumptions and practices, as managers must now interpret, adapt and implement new organizational policies regarding this growing flexible work form. Supervisors also often serve as gatekeepers, deciding whether or not individuals have access to tele-commuting (Mokhtarian & Salomon, 1996a, 1996b). Managers must learn how to supervise, maintain contact with and elicit performance from telecommuting subordinates despite the fact that they are out-of-sight. Super-visors also face the increasing complexity of managing blended workgroups comprising virtual and non-virtual members, which creates challenges for coordinating and motivating these employees (Van Dyne et al., 2007). Key questions that arise in response to the need to manage blended workgroups include: what are the most effective ways for supervisors to maintain contact with and monitor the schedules of telecommuting and non-telecommuting employees? How should work–family boundaries be managed for tele-commuting employees working in a home setting? How can supervisors ensure that telecommuters are motivated and able to help co-workers, despite

their limited face-to-face contact? Given these growing challenges in learning how to adapt the supervisory role to effectively manage new work forms, the goal of this article is to address these questions by exploring varying approaches to the supervision of telework. Using data from supervisors and a mix of telecommuter and non-telecommuter subordinates, we offer new insights into supportive management implementation behaviors that relate to improved work–family relationships and performance.

We designed our study to address several literature gaps. First, work–life researchers have often focused on adoption of formal telework policies, paying less attention to the details of implementation, supervision practices, and how these new ways of working affect telecommuters and non-telecommuters. Research on telecommuting has also been restricted in its scope, focused mainly on the perspectives and outcomes of individual telecommuters by examining them in isolation from their co-workers and those who supervise them on a day-to-day basis. We respond to the call by Golden (2007) and others for research on telecommuting that looks more broadly at telework and examines it in the workplace context with multiple stakeholder views.

Second, as Bailey and Kurland's (2002) review of the telecommuting literature notes, previous research on this phenomenon has largely been descriptive. The prevailing truism of this literature is that the use of flexibility should not undermine telecommuter performance, and that supervisors should adjust their behaviors to ensure positive performance for telecommuters. Yet, the literature is unclear about what this actually means for supervisors' management of performance and behaviors. The literature on family-supportive supervision shows that supervisors can enhance the positive effects of a family-friendly policy, like one supporting the use of telecommuting, or they can undermine the policy through their lack of support (Ryan & Kossek, 2008). Although behaviors are a critical component of the definition of family-supportive supervision (Allen, 2001), this research has tended to focus primarily on individuals' general perceptions of whether a supervisor is supportive, and to rarely measure actual behaviors supervisors may engage in to support flexible working (Hammer et al., in press). Below we develop our hypotheses by drawing on recent work–family theory, particularly related to family-supportive supervision, which is needed to cultivate a workplace culture of inclusiveness to support telework and other changes aimed at improving work–family outcomes for individuals.

We begin with a brief overview of research on the work–family effects of telecommuting. We then examine how supervisory practices can support workers so that they may use this new flexible work form to improve their

work–family well-being, while achieving high performance in their work roles. Given the mixed results our literature review shows, many of our hypotheses are exploratory.

Theory and hypotheses

The work–family effects of telecommuting

Telecommuting has been widely advocated as a solution to the challenges individuals face in reconciling their personal and work lives (e.g. Duxbury et al., 1998; *HR Focus*, 2002; Madsen, 2003). Two primary mechanisms are thought to create these positive results of telework: first, telecommuting can allow individuals to have greater control over work–family boundaries and particularly to schedule work at times of peak efficiency or around family needs; second, the reduction in commute times that results from tele-commuting frees temporal resources that can be devoted to family needs or to higher work performance (Gajendran & Harrison, 2007). Both of these mechanisms operate so that the work–family relationships and performance of telecommuters may be improved over what their outcomes would be in the absence of telework. Individuals who telework may also be better off than non-telecommuters because telecommuters are believed to have higher boundary control and shorter commutes.

Despite these potential benefits, scholars have been frustrated in their attempts to identify clear and consistent work–family outcomes of tele-commuting (Bailey & Kurland, 2002; McCloskey & Igbaria, 1998). While some research is positive (Duxbury et al., 1998), other studies are not (Hill et al., 1998). Golden et al. (2006) found that while work interference with family was reduced for professionals who telecommuted, family interference with work increased. They suggested that: 'telecommuters may simply be faced with a zero-sum trade-off such that as they reallocate the additional time, attention, and emotional energy made available by telecommuting to accommodate family pressures, work interferes less with family, but family interferes more with work' (Golden et al., 2006: 1346–7). However, a recent meta-analysis by Gajendran and Harrison (2007) concluded that, across a range of studies, telecommuting had modest but beneficial effects on work–family conflict (in both directions) and performance (both ratings and discretionary helping). Accordingly, we predict positive effects of tele-commuting on work–family relationships and performance.

> *Hypothesis 1*: Telecommuting will reduce work-to-family and family-to-work conflict and will increase performance and helping behaviors.

Supervisor behaviors that jointly manage the work–family needs of telecommuting employees and the needs of the business

We argue that the positive effects of telecommuting are more likely to be realized, when these arrangements are effectively implemented and supported in organizations. Work–life researchers are increasingly recognizing that the adoption of formal policies alone is not enough to reduce work–family conflict or support performance. For example, telecommuting policies may not be utilized or may vary in the level of cultural support they receive from supervisors in workgroups throughout the firm (Sutton & Noe, 2005). A culture of inclusiveness, which values differences across employees and helps all workers to be productive, regardless of their lifestyles, family demands or different ways of working, is required (Mor Barak, 2000; Pless & Maak, 2004; Ryan & Kossek, 2008).

A key factor in creating an inclusive culture is ensuring that supervisors are supportive of flexibility polices and alternative work arrangements. Several studies have shown that family-supportive supervision is linked with not only whether employees make use of work–life policies (e.g. Powell & Mainiero, 1999), but also with reduced work–family conflict (Allen, 2001; Batt & Valcour, 2003; Breaugh & Frye, 2007; Frye & Breaugh, 2004; Thomas & Ganster, 1995). A lack of supervisor support for work–family issues is associated with higher work–family conflict (Kelly et al., 2008).

There are two aspects of family-supportive supervision that have been identified in prior research: to be supportive requires not only that supervisors are empathetic and helpful with respect to their employees' personal lives and need for balance, but also that supervisors assist workers in maintaining their performance when they are taking advantage of work–life policies and practices like telecommuting (Allen, 2001). Our integrative review of insights from the telework and work–life literatures identifies four dilemmas faced by managers of blended telecommuter and non-telecommuter workforces who want to support telework policies in such a way that they reduce work–family conflict and at the same time enhance subordinates' performance. Supervisors need to determine: 1) whether to monitor telecommuters and non-telecommuters equitably in terms of providing consistent job descriptions and feedback to both groups or to change their styles and treat the two groups differently; 2) whether to regulate the work hours and schedules of telecommuters in order to ease coordination issues within workgroups; 3) whether to spend more time coordinating and checking-in with telecommuters; and 4) whether to try to exert 'boundary control' (Perlow, 1998) by requiring telecommuting workers to separate their work and home lives. Overall, we argue that the behaviors supervisors adopt

in response to these dilemmas will shape the effectiveness of telecommuting, and will influence whether telecommuters will enjoy improved work–family effectiveness – a critical requirement of being a family-supportive supervisor in the context of telework.

Supervisory monitoring behaviors for telecommuters versus non-telecommuters

How supervisors should monitor and guide the performance of tele-commuters has emerged as a matter of significant debate in the literature. Some researchers and practitioners recommend new modes of supervision for telecommuting – including increased job formalization, more frequent feedback and output-based evaluation – and predict positive outcomes for workers and firms from these practices (Bogdanski & Setliff, 2000; Wiesenfeld et al., 1999). They maintain that supervisors should adjust to the lack of day-to-day personal oversight in telecommuting arrangements by more clearly specifying job requirements, measuring results and providing specific and frequent performance feedback to telecommuters. Under this perspective, supervisors must alter the ways in which they manage tele-workers to enable them to thrive and be productive while working in a new flexible way. Supervisors are encouraged to be more directive by providing specific parameters to their employees to guide them in how to work in their flexible work arrangement.

An alternative perspective holds that supervisors should treat tele-commuters and non-telecommuters the same and should not replace direct oversight with new ways of tightly controlling work (e.g. Dimitrova, 2003). Such a view is consistent with equity concerns (Adams, 1965) and the idea that telecommuters might feel excluded and penalized for working in alterna-tive ways if supervisors treat them differently from workers who work a traditional schedule in the office. Consistent with this view, Lee et al. (2002) have found that workers in alternative work arrangements prefer to be treated the same as their colleagues in more traditional arrangements. Supportive supervision of telework under this perspective requires managers to simply continue to define jobs and provide feedback in a similar manner for all workers, telecommuter or not, rather than to attempt to provide more detailed direction for their telecommuters.

It is clear from both these perspectives that the choices supervisors make regarding whether to monitor telecommuters differently from their colleagues in terms of job formalization and providing performance feedback may influence the success of telecommuting arrangements (and especially its impact on work–family conflict, performance and helping behaviors). While

it seems likely that the right supervisory practices may enhance the beneficial outcomes of telecommuting, it is not clear whether supervisors should adopt new directive behaviors for virtual workers or should treat telecommuters and non-telecommuters the same. Since there is strong theory supporting both perspectives on an effective management approach, our exploratory hypothesis posits that supervisory approaches to monitoring telecommuters vis-à-vis non-telecommuters will matter, but we do not specify the direction of this relationship.

> *Hypothesis 2*: Supervisory monitoring behaviors (particularly job formalization and feedback) that are the same for telecommuters and non-telecommuters will moderate the relationships between telecommuting, work–family conflict, performance and helping behaviors.

Supervisory regulation of work hours for telecommuters

Supervisors may be accustomed to closely controlling the work hours of their employees, in part due to the need to coordinate activities within the work-groups they manage. When faced with managing telecommuting, many supervisors may find it difficult to relinquish this control and continue to require standard work hours, at least within a portion of the work day, to make telecommuter availability more predictable (e.g. Bray & Weatherford, 1999). Yet, as noted above, one of the primary benefits of telecommuting is that workers can enjoy improved work–family relationships and performance if they self-regulate their work hours. Accordingly, we expect that supervisors who undermine the flexibility of telecommuting by requiring standard hours will worsen its effects.

> *Hypothesis 3*: Supervisors who require standard work hours for telecommuters will moderate the relationship between telecommuting and work–family conflict such that the beneficial impacts of telecommuting will be reduced.

Frequency of supervisory contact with telecommuters

Some researchers argue that an active step managers may take to support telecommuters and ensure the success of new work arrangements is to be more frequently in touch with their subordinates (Bogdanski & Setliff, 2000; Wiesenfeld et al., 1999). However, whether or not this type of supervisory practice will be an effective support of telecommuting is not clear. On the one hand, telecommuters may find the intensified attention from their

supervisors intrusive and interpret it as undermining their autonomy and as signaling that their supervisor does not trust them or does not believe in their abilities (e.g. Dimitrova, 2003). On the other hand, researchers have often noted that telecommuters can be isolated and 'out of the loop' (e.g. Bailey & Kurland, 2002), which can reduce their performance, and more frequent contact with a supervisor may be a support that effectively eliminates this problem. Thus, we expect that frequency of contact between supervisors and telecommuting subordinates will moderate the performance effects of telework, but again cannot predict the direction of this effect.

> *Hypothesis 4*: Frequency of contact from a supervisor will moderate the relationship between telecommuting, performance and helping behaviors.

Supervisory control of the work–family boundary

Supervisors also may try to support their telecommuting employees by influencing how workers jointly manage the demands of work and home when they are working in the home; that is, how employees manage the work–family boundary. Nippert-Eng (1996) suggests that individuals construct mental and sometimes physical fences as a means of ordering their social, work and family environments. Through ethnographic interviews, she found that some people are mainly integrators. They like to blend work and family roles, switching between baking cookies with the kids and downloading email. Alternatively some people are separators – they prefer to keep work and non-work separate, rarely working from home or on the weekends, for example.

Supervisors are increasingly trying to influence whether their telecommuting workers integrate or separate their work and family roles. Many *Fortune* 500 employers and early adopters of telecommuting suggest methods and guidelines for managing families when working at home as part of their virtual office training (Davenport & Pearlson, 1998). We believe that when supervisors try to influence how workers choose to manage their work and home demands by forcing separation, it will lead to worse outcomes in terms of higher work-to-family and family-to-work conflict. Work–family research has examined organizations in which workers are forced to separate work and home through job designs that are inflexible and a workplace culture that requires workers to ignore their personal lives while at work. It has shown that these efforts to shape the boundary management choices of workers intensify work–family conflict (e.g. Bailyn, 1993; Galinsky & Stein, 1990; Levine & Pittinsky, 1998). Kossek and Lautsch (2008), for example,

have conducted research that shows that if individuals do not feel in control of whether they are separating or integrating their work–family relationships, and feel forced by others to adopt a style that does not fit with their values, they are less satisfied and experience work–family relationships as more negative and conflicting. While less examined, the efforts of supervisors to directly shape the boundary management choices of their telecommuting employees are likely to lead to similar negative outcomes.

> *Hypothesis 5*: Supervisory practices that require telecommuters to separate their work and home lives will moderate the relationship between telecommuting and work–family conflict (in both directions), such that the beneficial effects of telecommuting are reduced.

Methods and sample

Participants and procedure

This study relied on 90 dyads of supervisors and their professional direct reports, some of whom telecommuted (79%) and some of whom did not (21%). We designed the study to include both telecommuters and non-telecommuters from the same organization, as one shortcoming of many studies of flexible work arrangements is that only users are surveyed. This is a problem as both of these types of employees often need to work together in blended workgroups where they are supervised by the same manager. Both the telecommuting and non-telecommuting employees in our study worked in similar professional jobs in information technology and systems engineering, communications, finance, marketing, and human resources at two large information and financial services organizations, 'Infocom' and 'Datatel'.[1] The firms had similar work environments and both had professional job requirements (e.g. writing, email and use of Internet, programming, phone sales and project management) where many job tasks could be done as easily virtually as they could in the formal company office. Our sample was evenly drawn from both companies (43 from Infocom; 47 from Datatel) and in both companies a high proportion of workers (81% in Infocom and 77% in Datatel) telecommuted on at least an occasional basis. Supervisors in Datatel and Infocom reported that, on average, they had supervised telecommuting employees for about four years. Also, in both companies a formal policy existed to support telecommuting, but supervisors reported that the policy was simply for them to allow telecommuting at their discretion. Overall working arrangements were flexibly negotiated between supervisors and employees, with minimal corporate oversight.

We collected data from employees first and their supervisors three months later. Data were obtained from a written or emailed pre-interview survey covering job and family background and a taped telephone interview that was about 45 minutes in length. Prior to data collection, all individuals signed a voluntary written consent to participate after reviewing the purpose of the study (i.e. to examine the work and family effects of telecommuting and job flexibility) and a statement ensuring the confidentiality of all individual results.

The response rate for the employees in this study was 50 percent and for the supervisors it was 52 percent. The employee sample was well educated: 62 percent of these employees held at least a bachelor's degree. The sample was 59 percent female and 84 percent Caucasian. Approximately 32 percent of the employee sample was 35 years of age or younger, 46 percent were between 36 and 45, and 22 percent were 46 years of age or older. The demographic characteristics of our supervisor sample were very similar: 60 percent held at least a bachelor degree, 48 percent were female, 92 percent were Caucasian and the average age of supervisors was 42.

Dependent variables

A full list of our measures and the items included in our scales is included in Appendix 1.

Supervisor performance rating

We conducted phone interviews with supervisors for this measure, and asked them to respond to eight items developed by Fedor and Rowland (1989) stating, 'Please rate employee X's overall performance on the following characteristics.' The list of characteristics included 'Overall performance quality', 'Avoiding mistakes' and 'Performing up to the supervisor's standards'. The higher the score on the five-point Likert-type scale, the better the performance. Coefficient alpha reliability was .91.

Employee helping behavior

We measured employee helping behavior with a two-item scale adapted from Lambert (2000). Employees were asked: 'How often do you help other employees with their work when they have been absent?' and 'How often do you help your co-workers when they have too much to do?' Coefficient alpha reliability was .66. Although often considered extra-role performance, our sample comprised professionals and managers who have pressures to appear

career-oriented and help out. This was part of the professional cultural norms at the companies we studied, as noted in interviews with HR managers at Datatel and Infocom.

Employee work–family conflict

We assessed employee work–family conflict using a four-item work-to-family conflict scale and a three-item family-to-work conflict scale from Gutek et al. (1991). Employees were asked such questions as: 'My work takes up time that I'd like to spend with my family and friends', and 'My supervisors and peers dislike how often I am preoccupied with my personal life while at work.' Coefficient alpha reliabilities for the two subscales were .73 and .71, respectively.

Independent variables

Telecommuting status variable

We included an indicator variable, *whether telecommute*, that takes on a value of 1 for workers who report that they telecommute and is zero otherwise.

Supervisor reports of managerial behaviors

We assessed family-supportive managerial behaviors using items developed for this study. These items were developed from qualitative data in other studies of telecommuting and from our own discussions with workers. Any existing survey measures from prior studies were too general for our purposes.

Same monitoring

We created a scale to capture the degree to which a manager used similar approaches for managing telecommuters and non-telecommuters that combines the answers to two questions we asked supervisors. First, 'Do you use written performance standards to guide work activities more often, less often or about the same for telecommuters, compared to non-telecommuting employees?' (1 = about the same, 0 otherwise). Second, we asked supervisors: 'Do you provide feedback on their performance more often, less often, or about the same for telecommuters, compared to non-telecommuting employees?' (1 = about the same, 0 otherwise).[2] The scale takes on a value of 1 if either feedback or standard-setting are the same; 2 if both behaviors are the same; and 0 otherwise. As such, it measures the degree to which supervisory behaviors are the same for telecommuters and non-telecommuters.

Require standard hours

We asked supervisors what the standard work hours were in their workgroup and what hours they expected telecommuters to work. We coded their responses so that 1 indicates an expectation that telecommuters work standard hours and 0 indicates that telecommuters are allowed greater hours flexibility.

Frequency of management–subordinate contact

We also measure frequency of contact as the number of times supervisors are in contact with the telecommuting employees per week.

Require separation of work and family while telecommuting

We drew on qualitative data for assessing this managerial behavior. We iteratively coded qualitative data to create a measure of whether supervisors require their telecommuters to separate their home and family lives (1 = yes, separation is required, 0 = no). To elicit these qualitative data, we asked supervisors about the training they provided to teleworkers regarding how to manage work and family when working at home, and also about formal and informal telecommuting policies in their workplace. Sample comments to illustrate our coding are provided in Appendix 1.

Each of our supervisory behavior variables (*same monitoring, require standard hours, frequency of contact* and *require work–family separation*) measures an aspect of how supervisors manage telecommuters. Both telecommuters and non-telecommuters of a given supervisor received the same score on the supervisory behavior variables. These variables allow us to test the effect of various approaches to managing telecommuting on all members of the workgroup, telecommuter and non-telecommuter alike. This is important as the literature suggests that the way a supervisor manages telecommuters can positively or negatively influence non-telecommuters who need to pick up the slack for telecommuters or have to coordinate work with virtual workers (e.g. Golden, 2007).

Controls

Several variables were included to control for job and individual differences that have been shown in prior research to affect work and family outcomes (Barrick & Mount, 1991; Hill et al., 1998; Lobel & St Clair, 1992; Sturman, 2003). *Job involvement* is a six-item scale drawn from Lobel and St Clair (1992). Sample items include: 'The most important things that happen in life

involve work' and 'work should only be a small part of one's life' (reversed). The reliability for this scale was .70. Respondents noted their *gender* (1 = female; 0 = male) and whether they have dependent *children* (1 = have children; 0 = no children). We also include an organizational indicator variable to control for any differences across the two companies in our sample. Finally, we created a measure to capture variation in how telecommuting may be structured: *heavy telecommute hours*. Respondents indicated the percent of their jobs they currently performed away from their main office or customer, and we coded an indicator variable for those who telecommute for more than 50 percent of their work time (Gajendran & Harrison, 2007).

Results

Table 1 presents the means, standard deviations, and inter-correlations for all variables in this study. We used standard multiple regression and results are shown in Table 2. In addition, robust standard errors are used in the analyses (Huber-White correction). Robust standard errors are preferred to control for common variation among employees of a given supervisor.

The regression results show that behaviors supervisors engage in to support their telecommuters and enable them to thrive and be productive in their new work arrangements do shape the outcomes of telecommuting.

Turning to Hypothesis 1, we predicted that telecommuting would have beneficial effects on work–family conflict, performance and helping behaviors. This hypothesis was only partially supported. Telecommuting was associated with lower employee work-to-family conflict, but had no impact on family-to-work conflict, helping behaviors or performance.

We next predicted in Hypothesis 2 that supervisory monitoring practices regarding job formalization and feedback that were the same for telecommuters and non-telecommuters would moderate the relationships between telecommuting, work–family conflict, performance and employee helping behaviors. We graphed significant interactions and include these in Figures 1–4 to aid in interpretation. In producing these figures, we followed procedures outlined in Aiken and West (1991).

We found that adopting the same monitoring practices for telecommuters and non-telecommuters does significantly lower work-to-family conflict for telecommuters, albeit with modest effects. Telecommuters whose supervisors monitor them in the same way as non-telecommuters will have lower work-to-family conflict than telecommuters whose supervisors do not follow this approach.

Table 1 Means, standard deviations and correlations

	n	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 Work-to-family conflict	90	2.85	0.70	1.00													
2 Family-to-work conflict	90	1.76	0.43	0.02	1.00												
3 Performance	84	3.91	0.62	0.02	−0.08	1.00											
4 Helping behaviors	89	3.44	0.70	0.12	−0.10	0.09	1.00										
5 Job involvement	90	2.26	0.57	0.03	−0.02	−0.06	−0.11	1.00									
6 Gender	90	0.59	0.49	0.00	0.01	0.29*	0.17	−0.23*	1.00								
7 Children	89	0.54	0.50	−0.11	0.25*	−0.07	0.04	0.16	−0.12	1.00							
8 Heavy telecommute hours	90	0.24	0.43	0.07	−0.11	0.24*	−0.02	−0.15	0.16	−0.15	1.00						
9 Company	90	0.52	0.50	0.08	−0.01	0.07	−0.12	−0.15	0.24*	−0.22*	0.44***	1.00					
10 Whether telecommute	90	0.79	0.41	−0.04	0.06	0.08	−0.01	−0.07	−0.10	0.18	0.29***	−0.06	1.00				
11 Same monitoring	90	1.48	0.81	−0.10	−0.07	0.10	−0.05	0.06	0.05	0.12	0.11	0.26*	0.00	1.00			
12 Require standard hours	76	0.43	0.50	0.07	0.05	0.13	−0.08	−0.04	−0.11	−0.19	0.05	0.20	−0.17	−0.04	1.00		
13 Frequency of contact	67	10.95	6.88	−0.04	0.03	−0.04	0.19	0.01	0.05	0.09	−0.26*	0.04	−0.19	0.35**	−0.21	1.00	
14 Require work–family separation	90	0.20	0.40	−0.03	−0.02	−0.13	−0.14	−0.08	0.14	−0.10	−0.03	0.31**	−0.22*	0.08	−0.13	0.00	1.00

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

Table 2 Results of regression on effect of supervisory family-supportive behaviors on work–life outcomes

Variable	Employee work-to-family conflict coefficient	Employee family-to-work conflict coefficient	Employee performance coefficient	Employee helping behaviors coefficient
Employee and job controls				
Job involvement	0.19	–0.04	–0.06	–0.10
Gender	–0.15	0.12	0.35	0.38
Children	0.03	0.23	0.02	0.04
Heavy telecommute hours	0.06	–0.06	0.09	0.21
Company	0.18	–0.04	–0.03	–0.44
Predictor				
Whether telecommute	–1.86*	0.39	1.10	–0.87
Moderators: Supervisor reports of family-supportive behaviors				
Same monitoring	–1.23**	0.36	0.68**	–0.67*
Require standard hours	–0.15	–0.24	–0.15	0.13
Frequency of contact	–0.01	–0.01	–0.01	–0.01
Require work–family separation	0.59*	0.16	0.07	0.54*
Same monitoring × Telecommuter	1.04*	–0.29	–0.55	0.32
Require standard hours × Telecommuter	0.18	0.30	0.42	–0.14
Frequent contact × Telecommuter	0.02	0.00	0.00	0.06*
Require work–family separation × telecommuter	–0.94*	–0.10	–0.13	–1.11***
Constant	4.54***	1.20*	2.56***	4.71***
R^2	.21	.14	.21	.35

Robust standard errors. N: 60–4. * $p < .05$, ** $p < .01$, *** $p < .001$.

A further surprising result is that non-telecommuters are affected even more strongly than telecommuters by these supervisory practices (see Figure 1). Figure 1 shows that non-telecommuters' work–family conflict sharply declines in cases where supervisors monitor telecommuters and non-telecommuters more similarly. Simple slope analyses were used to provide additional detailed analysis of these differences between telecommuters and non-telecommuters. These tests show that non-telecommuters experience higher levels of work–family conflict where teleworkers are monitored
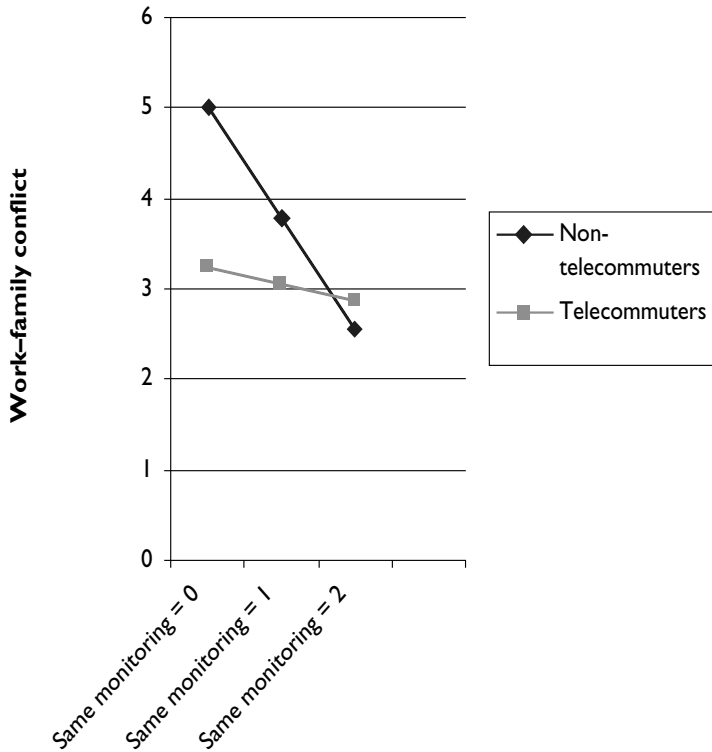
Figure 1 The moderating effect of supervising telecommuters and non-telecommuters the same on the relationship between telecommuting and work–family conflict

differently (b = −1.77, p = .042), but that differences between telecommuters and non-telecommuters in work–family conflict are no longer significant in cases where supervision is very similar for the two groups of workers (same supervision = 2, b = .31, p = NS).[3]

In our sample, telecommuters and non-telecommuters worked together on teams and were very aware of each other's status and treatment. It appears that non-telecommuters were particularly sensitive to whether or not telecommuters were being supervised differently, and that this shaped the extent to which they perceived conflict between their own work and home lives. Our qualitative data lend some support to this interpretation. An example of a typical supervisory comment is 'Sometimes the perception is that work is transferred to employees who are in the office.' In this context, non-telecommuters may resent any changes in supervisory behaviors, attributing changes in their workload to the telecommuter not working hard enough or being granted special privileges. Another manager who supervised

his telecommuters and non-telecommuters the same said that relations among co-workers were a problem: '[There's a] split community between telecommuters and non-telecommuters. Feelings non-teleworkers have of perks and favoritism.' The idea that non-telecommuters might resent telecommuting colleagues, perceiving that they have easier work and receive favoritism from management, thereby making non-telecommuters' work lives and work–family relationships harder, was echoed in exemplary statements from several workers:

> When some people are given privileges over others, I think there is going to be some resentment. It certainly fosters a bit of a negative environment.

> The impression of working at home is that you are not doing anything.

> People who do work at home . . . are considered given 'special privilege' and put on the shit list.

> I get 'looks' from co-workers about leaving early and coming in late.

> A big drawback [of telecommuting] is the mindset of those who don't work from home.

Adopting the same monitoring practices for telecommuters and non-telecommuters was also directly related to performance, significantly and positively increasing performance across our sample. Using the same monitoring techniques for telecommuters and non-telecommuters was significantly related to employee helping behaviors, though not in the expected direction. Supervisors who continue to rely on their traditional ways of formalizing jobs and providing feedback tend to have employees – telecommuters and non-telecommuters alike – who engage in less helping behaviors. The explanation may lie in the kinds of co-worker resentments that are outlined above. While supervising the same may assuage some equity-concerns for members of groups that include both telecommuters and non-telecommuters, and be helpful in terms of work–family conflict, this may not be sufficient to motivate group members to extend themselves to help each other. Instead, when alternative and traditional work forms are blended, more active supervisory behaviors may be needed to fully support and integrate employees and to assist them in performing fully.

Turning to Hypothesis 3, we proposed that supervisors who required standard work hours of telecommuters would undermine the beneficial effects of teleworking. However, we found no support for this prediction. It appears that telecommuting could still be helpful for employees looking to

improve their work–family relationships, even when their supervisors are unwilling to give them a more flexible schedule at home. Schedule flexibility may be less important to telecommuters than reduced commute time, which creates additional resources to address work and family needs.

We next predicted in Hypothesis 4 that frequent supervisor contact to support telecommuters would moderate the relationship between telecommuting, performance and helping behaviors. We found partial support for this prediction; frequent contact significantly increases employee helping behaviors from telecommuters (see Table 2 and Figure 2). Simple slope analyses reveal that, at high levels of contact, telecommuters have higher helping behaviors (b = .41, p = .068). However, at low levels of supervisory contact there is no significant difference in helping behaviors between teleworkers and non-teleworkers (b = –.39, p = NS). More frequent contact may be geared at helping to integrate telecommuters into their workgroup and may be an example of the kind of 'active management' that is needed to be an effective family-supportive supervisor in a virtual context. For workgroups that combine telecommuting and non-telecommuting employees to be effective, there must be shared awareness of others, help with work sequencing and member coordination of inputs and outputs (Van Dyne et al., 2007). Increased supervisory contact helps ensure these processes occur. For example, one supervisor in our study who was in very frequent contact with her telecommuting subordinates said:

> [It is] important to have frequent quality contact and check in. Make sure to include teleworkers in conversation and dialogue. Keep them engaged not just with work issues, but also with personal as well.

This supervisor's telecommuting worker reported feeling well integrated in a cooperative workgroup, a fact likely related to this supervisor's approach to staying in touch:

> Even though members [of my team] work on different corporate initiatives, [we] help each other.

Similarly, another supervisor who reported contacting his telecommuting employees 32 times per week, well above the average in our study, stated that it is critical to 'be available' and to 'make [telecommuters] a natural participant in meetings when they are telecommuting in'. A telecommuting employee said of this supervisor, who engaged in extensive helping behaviors, that 'the morale on [his] team is excellent' and that he isn't isolated because he is 'constantly talking and emailing' with everyone at work.

Finally, in Hypothesis 5 we suggested that supervisors who attempt to exert control over employee work–family boundaries would worsen the
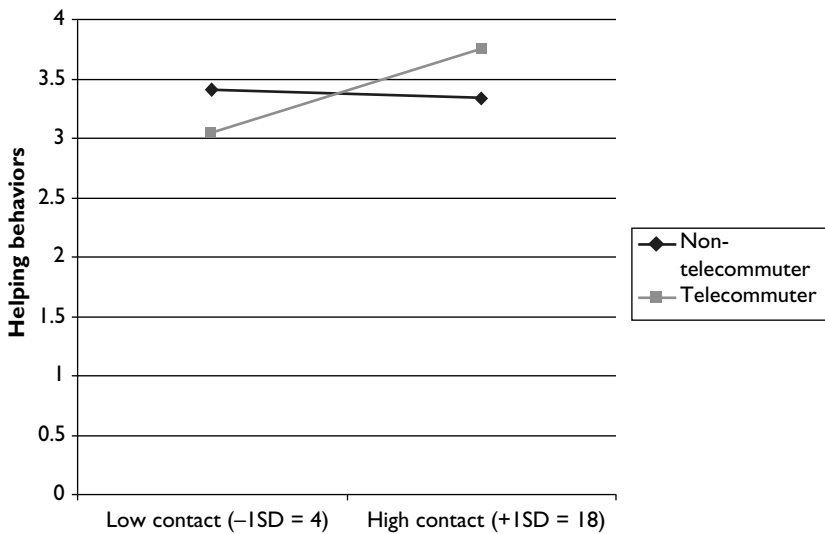
Figure 2   The moderating role of supervisors engaging in frequent contact on the relationship between telecommuting and helping behaviors

outcomes of telecommuting. We include two graphs (Figures 3 and 4) to aid interpretation of the moderating effects of this supervisory behavior.

We found, contrary to our expectations, that requiring work–family separation was beneficial for telecommuters and reduced their work–family conflict. We turned again to our qualitative data to help interpret these results. These data can provide further insight into how supervisors tried to ensure that separation of work and family occurred and what this might have meant for telecommuters. Supervisors in our sample varied in the formality with which they encouraged work–family separation, with some initiating just a discussion with their employees and others creating a formal document that laid out expectations for the new work arrangements. But what was common across supervisors was a clear expectation that telecommuting employees would not be attending to family matters, particularly to the needs of children, during work hours. The following supervisors' comments are illustrative:

I want to know what daycare arrangements they have.

It [telecommuting] is not an option for babysitting.

No [doing] childcare [while working], must treat it the same as if in the office.

[There must be] separation between taking care of children and work.

So, in attempting to foster separation of work and family roles, supervisors appear to be most concerned with childcare issues disrupting work. It appears that telecommuters, rather than resenting this intrusion, may benefit from supervisors' coaching to create some separation between family and work demands. This is consistent with some research on telecommuting which has identified strains for telecommuters in trying to jointly manage care for children and work (e.g. Christensen, 1988). It is also consistent with some recent boundary theory which shows the benefits for some workers of separation (e.g. Kossek et al., 2006).

On the other hand, supervisors who require telecommuters to separate also face several unintended consequences of this practice. First, tele-commuters, perhaps because they draw strict boundaries around their work at the request of their supervisor, do not extend themselves to engage in helping behaviors toward their colleagues (see Figure 3). At the same time, non-teleworkers appear to bear the brunt of this because their own helping
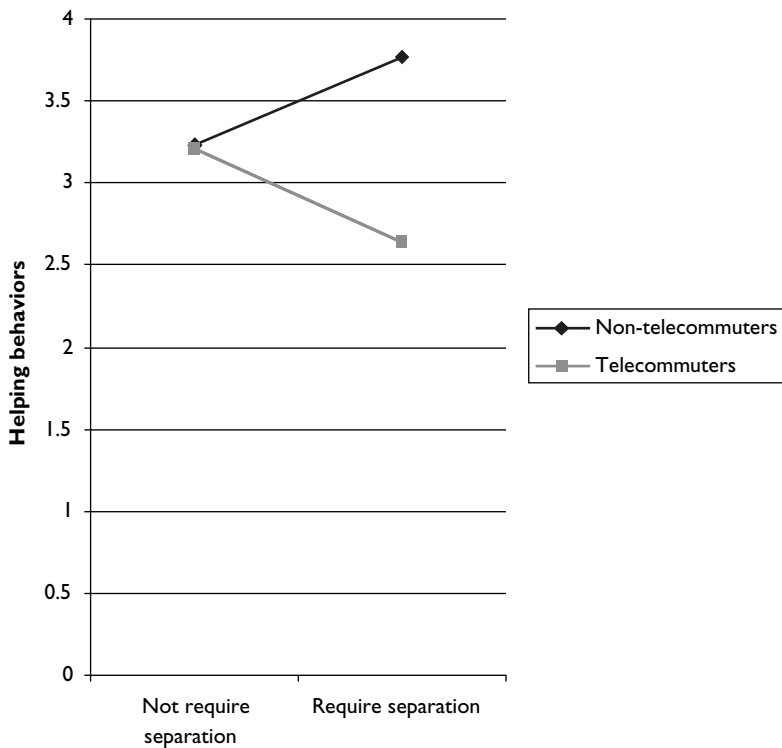

Figure 3   The moderating role of supervisors requiring work–life separation on the relationship between telecommuting and helping behaviors

behaviors increase. Simple slope analyses show that telecommuters and non-telecommuters do not differ in helping behaviors where supervisors do not require work family boundary separation (b = −.02, p = NS). In contrast, there are dramatic differences between the two groups of workers where supervisors do attempt to shape the work–family boundary in this way (b = −1.14, p = .001). The helping behaviors we examined are in-role helping actions for the professionals in our sample and include helping co-workers who are absent. Teleworkers who strictly separate work and family life may then no longer just be out of sight, but also may be unavailable for last-minute or unplanned work and so non-teleworkers are more likely to be called upon to assist.

This may also contribute to the fact that non-telecommuters in these workgroups find that their own work–family conflict increases (see Figure 4). Simple slope analyses show that, where supervisors require work–family separation, telecommuters will have lower work–family conflict, while non-telecommuters' work–family conflict is higher under these circumstances (b = −1.12, p = .006). In contrast, the difference in work–family conflict for telecommuters and non-telecommuters is insignificant under conditions where supervisors do not require separation (b = −.17, p = NS). In sum, when
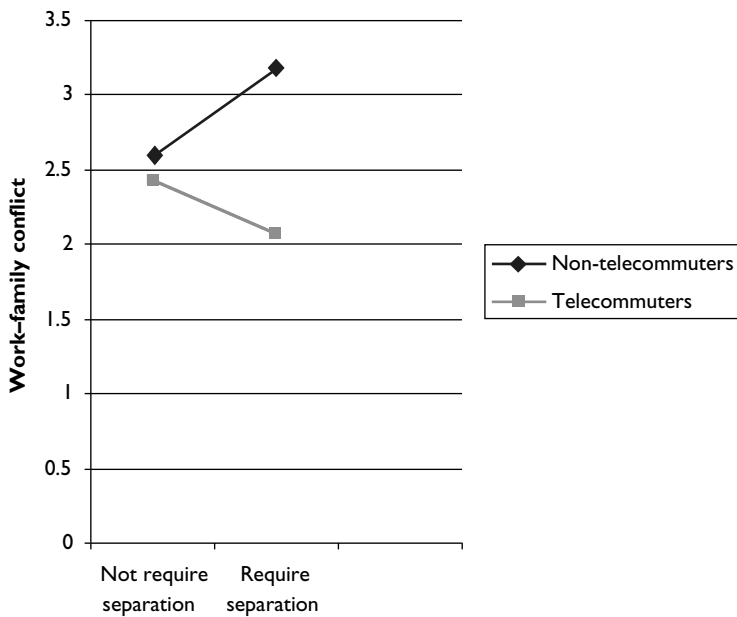

Figure 4   The moderating role of supervisors requiring work–life separation on the relationship between telecommuting and work–family conflict

teleworkers are encouraged to set firm limits around their work and personal lives, non-teleworkers may receive less assistance from teleworkers after hours, and may have to pick up additional duties, which in turn increases their own work–life conflict.

Our qualitative data reinforce the ideas that telecommuters who are forced to separate work and personal life may begin to look at work differently, and to view their time after work hours as their own. As one telecommuter, whose supervisor required separation, said: 'Telecommuting isn't about how long you can sit in a seat, [or about being] a 12/hour/day worker hero who accomplishes nothing'. Conversely, telecommuters whose supervisors did not focus on imposing strict separation of work and home life made comments that reflected the fact that their supervisors and co-workers expected them to be constantly available:

> I get weekend calls and evening calls. When I'm sick, they [at work] still expect me to get work done since I don't have to come into the office.

> My flexibility includes carrying a pager and understanding interruptions.

Thus, telecommuters who do not separate may engage in more helping behaviors because they are always available to their colleagues and supervisor, a factor which likely contributes to lower work strains for their non-telecommuting co-workers.

Discussion

This study contributes to the debate over whether new modes of supervision are desirable in the context of telecommuting. Our research adds to the current understanding of new work practice implementation, by unpacking the reasons for mixed results, and highlighting the tensions and paradoxes supervisors, and workgroup members of new flexible work arrangements face in jointly enacting new ways of working. While some researchers have advocated for adaptive supervision practices for implementing new ways of working such as telecommuting (Bogdanski & Setliff, 2000; Wiesenfeld et al., 1999), other arguments instead favor focusing on equitable supervision of workers in different types of work arrangements (Dimitrova, 2003; Lee et al., 2002). We find some truth in both of these perspectives and some unintended consequences, particularly for non-telecommuters, of supervisors' styles for managing new telecommuting arrangements.

Overall, our study shows that telecommuters benefit from equity in monitoring practices, as well as from increased contact with their supervisors related to information sharing and from encouragement to establish some separation in managing work–family boundaries. Supervisors need to develop new approaches attuned to the needs of workers in new flexible arrangements (i.e. increased information sharing and assistance in boundary management), but at the same time remain attentive to equity issues within workgroups (such as monitoring equally). Non-telecommuters are also influenced by these practices, experiencing some positive outcomes from equitable monitoring practices, but also increased work–family conflict when supervisors require telecommuters to separate work and family. Accordingly, supervisors face a paradox that a supervisory behavior that benefits telecommuters may harm non-telecommuters and have other unintended negative impacts. As a result, they may need to experiment and work collaboratively with both workgroups to derive new adaptive solutions to resolve these tensions.

Thus, we have begun to identify specific changes that supervisors should make in the context of supporting a telework policy. In doing so, we build on and contribute to the literature on family supportive supervision. In a recent review of this literature, Hopkins stated that 'studies have not sufficiently examined the real-life actions by supervisors in actual work settings, but rather what workers perceive or say supervisors do, and what supervisors report they would do in hypothetical situations' (2005: 451). We have taken a first step at filling this gap and hope future research will continue to explore, and to develop practical guidance for supervisors, in terms of how they can help to support the well-being and performance of workers in flexible work arrangements like telework.

We wish to reinforce that one of the most surprising findings of the study was how a supervisory style that favored separation between work and family related to *lower* work–family conflict for telecommuters but also to *lower* telecommuter helping behaviors and to *higher* work–family conflict for non-telecommuters. We surmise that for telecommuters, having the requirement to set up childcare arrangements is beneficial and enables them to avoid role overload. Telecommuters are less likely to be tempted to multitask and save on childcare expenses by looking after their children while working. Yet, while telecommuters appear to benefit from the separation of work and family, this approach also seems to suppress their helping behaviors and to worsen the work–family conflict of non-telecommuters. Supervisors who wish to encourage separation for telecommuters will need to make other adjustments to their supervisory practices to compensate for these negative

effects. For example, our other results do show that telecommuter helping behaviors can be increased through frequent contact with telecommuters, which can ensure that telecommuters know of department needs and are more motivated to help out.

It may also be that a coordinated effort will be needed within work-groups to develop a response that respects the work–family needs of all group members. The aim should be to avoid a situation where non-telecommuters lack needed assistance from telecommuters or where they face greater work demands because of their availability in the office for last-minute or crisis projects that might be harder to assign to a telecommuting colleague. For example, workgroups may benefit from negotiating rules about after-hours access for both telecommuters and non-telecommuters. Alternatively, non-telecommuters, because of their longer hours in the office, may benefit from being able to occasionally integrate their personal life into work time and this may help reduce their work–family conflict. For example, non-teleworkers may benefit from flex-time to allow them to alter the starting and ending times of their workday around personal needs; or to be able to take breaks at work to attend to personal needs; or even to occasionally informally telecommute. From this perspective, family-supportive super-vision of telecommuting has much in common with what has been termed the 'dual-agenda' of work–life scholars and activists: namely to engage workers and managers in a collaborative process to redesign work to improve both work–family relationships and performance for all workers (Friedman et al., 1998; Lee et al., 2000; Rapoport & Bailyn, 1996).

Future research should continue to explore how supervisors could involve their workgroups in supporting the implementation of flexible work in ways that would benefit the business as well as all workers, regardless of their work arrangement. Future studies also need to build on the method-ological approaches used here by collecting data on the impact of telework from the overall social workgroup context in which these new work practices are embedded, as well as by triangulating quantitative and qualitative data. Of course, more research needs to be done to replicate the paradoxes and implementation issues for telecommuting that we found here as well as to identify new ones, such as challenges for families in supporting teleworking.

Study limitations

Although we triangulate both survey and interview data, have collected performance and other data from supervisors separately from employees, and have data from telework users and non-users, a study limitation is that we use cross-sectional self-report data for some measures. Cross-sectional

research, of course, cannot demonstrate direction or causality of effects. Longitudinal research would help to clarify the relationships we identify. These methods are very expensive, but may be well worth the investment.

There may also be important differences across individuals in terms of the type of supervisory approach that they prefer and that best meets their needs. For example, although we found that supervisors who encourage their telecommuters to separate their personal and work lives help workers to reduce their work–family conflict, there may be individuals with such a strong preference for integration that this approach fails them. Or, there may be individual telecommuters who so value their privacy in working at home that the extra supervisory contact and support that most teleworkers appreciated in our sample would instead be interpreted as an intrusive and unhelpful supervisory practice. Future research could explore whether supervisory approaches should not only be tailored to fit the needs of different groups of workers (i.e. telecommuters and non-telecommuters), but whether they should also be contingent on individual characteristics like boundary management preferences or preferences for autonomous work.

A final limitation of our study that further research should address is that it does not explore how individual reactions to telecommuting and to different modes of supervision are enacted not only on an individual level but also as a culturally driven phenomenon. For example, not all telecommuting individuals may welcome supervisory attempts to train workers to separate work and home. Poster and Prasad (2003) found that professionals in the US and in India had very different cultural norms about boundary management. In general, attempts to compare multiple stakeholders' (e.g. supervisors, telecommuters and traditional non-teleworkers) experiences with telecommuting across countries are limited and are worth expansion (Kurland & Egan, 1999).

Implications for practice

Our results have clear implications for managers seeking to support the work–family needs of workers in organizations with telecommuting, without sacrificing employee performance.

Good supervision: Don't increase 'monitoring'

Our study suggests that overall supervisors should manage telecommuters and non-telecommuters the same in terms of monitoring and providing feedback. Managers should not demonstrate lower trust and higher scrutiny of telecommuters by monitoring them more closely or by checking

up on their time management more often than their non-telecommuting counterparts. Supervisors who monitored their telecommuters and non-telecommuters to the same degree had telecommuters with lower work–family conflict and higher performance. Non-telecommuters also were sensitive to any differential treatment of telecommuters and benefited when supervisors focused on equitable monitoring practices.

Checking in: Frequent contact is beneficial

Our results show that when one considers the effects of telecommuting on the workgroup as a whole, particularly the prevalence of helping behaviors, an exception is needed. Increased frequency of supervisor contact neutralizes the effects of reduced face time on the motivation to help out (Van Dyne et al., 2007).

One may ask, what is the difference between 'monitoring' versus 'frequency of contact'? The former has authoritarian dynamics where workers are required to keep track of time and report on what has been achieved – a one-way communication dynamic. The latter, frequency of contact, focuses on two-way information where work issues are discussed, problems are solved, and work is coordinated and scheduled. For this reason, we expect that increasing communication with telecommuters will not create the same sense of inequity that may result from differential monitoring. We found that telecommuters do seem to benefit when supervisors adjust their approaches in terms of staying in more frequent contact. As others have suggested, it may be that telecommuting workers require frequent contact to avoid being 'out of sight and out of mind' (Bogdanski & Setliff, 2000; Wiesenfeld et al., 1999). Work–life studies should focus on increasing our understanding of how supervisors learn to adapt their management styles to be supportive as implementers of new work forms and organizational change.

Boundary management: Some separation can be helpful

Supervisors should also encourage telecommuting workers to recognize the costs of interruptions and of frequent switching between work and home tasks. Some separation can be helpful for telecommuters in terms of reducing work interference with family. But separation may ultimately make tele-commuting employees less likely to help others, so steps such as increasing contact and negotiating workgroup solutions may be necessary to counter this tendency.

Create a culture of rewarding helping behaviors

In order to overcome the helping behavior results we found, supervisors need to create a culture of support so that co-workers help each other regardless of where and when individuals work. Such a culture would provide rewards to employees who help each other out and would make helping others a positive workgroup norm. Discussion of team member back-up and norms for handling unexpected work that comes in at inconvenient times (e.g. Friday afternoon for a 9–5 office) need to be developed and socialized.

Conclusion

Overall, it may be how telecommuting is implemented, rather than simply whether or not workers telecommute, that determines whether or not it will have positive effects on employee performance and work–family conflict. New ways of working such as telecommuting are only useful if they are effectively implemented and supported by supervisors throughout the organization. Recent practitioner reports indicate that some major firms such as ATT and Hewlett Packard are cutting back on telecommuting (Shellenbarger, 2007). We suggest that perhaps these companies need to first examine how they have implemented telecommuting and whether they have invested sufficient resources into training supervisors and re-socializing and helping individuals working in different ways to work effectively together. More organizational and managerial learning is needed to effectively implement these new ways of working. Thus, the nature of supervision is only one factor that might influence the outcomes of telecommuting. Future research should consider other ways in which telecommuting, and other forms of flexible work vary, such as the variability of workers' schedules, and how much control employees gain to adjust the timing and location of their work. Also important would be measures that link effective implementation of telecommuting to business objectives and effectiveness, such as increased ability to serve customers 24–7 in the increasingly interconnected global economy.

Although leading work–family theorists have suggested that the field needs to examine further the practice and processes of change (see, for example, Rapoport et al., 2002), few studies have done so to date. We hope this article will prompt future scholarly work to uncover more about how organizations adopt and distribute flexibility, about the conditions that lead to their effectiveness including how workers are supervised and managed, and about how flexible work arrangements like telecommuting can provide greater benefit to individuals and organizations.

Acknowledgements

Appendix I   Variables

Variable	Measurement
Helping behaviors	Two-item scale 1. 'How often do you help other employees with their work when they have been absent?' 2. 'How often do you help your co-workers when they have too much to do?'
Performance	Eight-item scale 'Please rate employee X's overall performance on the following characteristics': 1. 'overall performance quality' 2. 'avoiding mistakes' 3. 'performing up to the supervisor's standards' 4. 'finishing work in a timely fashion' 5. 'attendance level' 6. 'effort level' 7. 'doing extra work that is not specifically required of him or her' 8. 'satisfying others who depend on his or her work'
Work-to-family conflict	Four-item scale 1. 'My work takes up time that I'd like to spend with my family and friends' 2. 'After work I come home too tired to do some of the things I'd like to do' 3. 'On the job I have so much work to do that it takes away from my personal interests' 4. 'My family and friends dislike how often I am preoccupied with my work while I am at home'
Family-to-work conflict	Three-item scale 1. 'My personal demands are so great that it takes away from my work' 2. 'My supervisors and peers dislike how often I am preoccupied with my personal life while at work' 3. 'My personal life takes up time that I'd like to spend at work'

Appendix I   contined

Variable	Measurement
Require work–family separation	1 = supervisor requires telecommuters to separate work and family; 0 = otherwise Coded from qualitative data. Sample comments include: 'separation between taking care of children and work'; 'no children or childcare, dedicated work space'.
Same monitoring for teleworkers and non-teleworkers	Index of feedback and standard setting monitoring behaviors and whether they are the same for telecommuters and non-telecommuters. 0 = no monitoring behaviors that are the same; 1 = either feedback or standard setting are the same; 2 = both standard setting and feedback practices are the same.
Require standard hours	1 = supervisor requires telecommuters to work the hours that are standard for the work group; 0 = otherwise.
Frequency of contact	Number of times supervisors are in contact with their telecommuting employees per week.
Job involvement	Six-item scale 1. 'The most important things that happen in life involve work' 2. 'Work should only be a small part of one's life' (reversed) 3. 'Work is something people should get involved in most of the time' 4. 'Work should be considered central to life' 5. 'In my view, an individual's personal life goal should be work oriented' 6. 'Life is only worth living when people get absorbed in work'
Gender	1 = female; 0 = male
Telecommute	1 = telecommuter; 0 = otherwise
Children	1 = has children; 0 = otherwise
Heavy telecommute hours	1 = telecommute more than 50% of work time; 0 = otherwise
Company	1 = Datatel; 0 = Infocom

Notes

1   Due to confidentiality agreements, we have renamed the firms that participated in this study.
2   Because there was only a single case where a supervisor reported 'less' frequent use of written performance standards or feedback, this variable is best interpreted as treating teleworkers the same relative to providing 'more' frequent feedback and written standards.
3   We again followed procedures described in Aiken and West (1991) in conducting these simple slope tests. Simple slopes were calculated, conditional on each value of our variables of interest, for the reference case where all other variables interacted with telecommuting are held at sample means.

References

Adams, J.S. Inequity in social exchange. In L. Berkowitz (Ed.), *Advances in experimental psychology*. New York: Academic Press, 1965, pp. 157–89.

Aiken, L.S. & West, S.G. *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: SAGE, 1991.

Allen, T.D. Family-supportive work environments: The role of organizational perceptions. *Journal of Vocational Behavior*, 2001, *58*, 414–35.

Bailey, D.E. & Kurland, N.B. Review of telework research: Findings, new directions, and lessons for the study of modern work. *Journal of Organizational Behavior*, 2002, *23*, 383–400.

Bailyn, L. *Breaking the mold*. New York: Basic Books, 1993.

Barrick, M.R. & Mount, M.K. The big five personality dimensions and job performance: A meta-analysis. *Personnel Psychology*, 1991, *44*, 1–26.

Batt, R. & Valcour, P.M. Human resource practices as predictors of work–family outcomes and employee turnover. *Industrial Relations*, 2003, *42*, 189–220.

Belanger, F. & Collins, R.W. Distributed work arrangements: A research framework. *Information Society*, 1998, *14*, 137–52.

Bogdanski, C. & Setliff, R. Leaderless supervision: A response to Thomas. *Human Resource Development Quarterly*, 2000, *11*, 197–201.

Bray, L. & Weatherford, C.J. Out-of-sight work options. *Association Management*, 1999, *51*, 30–43.

Breaugh, J.A. & Frye, N.K. An examination of the antecedents and consequences of the use of family-friendly benefits. *Journal of Managerial Issues*, 2007, *19*, 35–52.

Christensen, K. *The new era of home-based work: Directions and policies*. Boulder, CO: Westview, 1988.

Davenport, T.H. & Pearlson, K. Two cheers for the virtual office. *Sloan Management Review*, 1998, *39*, 51–65.

Dimitrova, D. Controlling teleworkers: Supervisions and flexibility revisited. *New Technology, Work, and Employment*, 2003, *18*, 181–95.

Duxbury, L.E., Higgins, C.A. & Neufeld, D. Telework and the balance between work and family: Is telework part of the problem or part of the solution? In M. Igbaria & M. Tan (Eds), *The virtual workplace*. Hershey, PA: Idea Group Publishing, 1998, pp. 218–55.

Fedor, D. & Rowland, K. Investigating supervisor attributions of subordinate performance. *Journal of Management*, 1989, *15*, 405–16.

Friedman, S.D., Christensen, P. & DeGroot, J. Work and life: The end of the zero-sum game. *Harvard Business Review*, 1998, November–December, pp. 119–29.

Frye, N.K. & Breaugh, J.A. Family-friendly policies, supervisor support, work–family conflict, family–work conflict, and satisfaction: A test of a conceptual model. *Journal of Business and Psychology*, 2004, *19*, 197–220.

Gajendran, R.S. & Harrison, D.A. The good, the bad, and the unknown about telecommuting: Meta-analysis of psychological mediators and individual consequences. *Journal of Applied Psychology*, 2007, *92*, 1524–41.

Galinsky, E. & Stein, P.J. The impact of human resource policies on employees: Balancing work/family life. *Journal of Family Issues*, 1990, *114*, 368–83.

Golden, T. Co-workers who telework and the impact on those in the office: Understanding the implications of virtual work for co-worker satisfaction and turnover intentions. *Human Relations*, 2007, *60*, 1641–67.

Golden, T.D., Veiga, J.F. & Simsek, Z. Telecommuting's differential impact on work–family conflict: Is there no place like home? *Journal of Applied Psychology*, 2006, *91*, 1340–50.

Gutek, B.A., Searle, S. & Klepa, L. Rational versus gender role explanations for work–family conflict. *Journal of Applied Psychology*, 1991, *76*, 560–8.

Hammer, L., Kossek, E., Yragui, N., Bodner, T. & Hansen, G. Development and validation of a multi-dimensional scale of family supportive supervisor behaviors (FSSB). *Journal of Management*, in press.

Hill, E.J., Miller, B.C., Weiner, S.P. & Colihan, J. Influences of the virtual office on aspects of work and work/life balance. *Personnel Psychology*, 1998, 5, 667–83.

Hopkins, K. Supervisor support and work–life integration: A social identity perspective. In E.E. Kossek & S.J. Lambert (Eds), *Work and life integration: Organizational, cultural and individual perspectives*. Mahwah, NJ: Lawrence Erlbaum Associates, 2005, pp. 445–68.

HR Focus. Time to take another look at telecommuting. *HR Focus*, 2002, 79, 6–7.

Kelly, E., Kossek, E., Hammer, L., Durham, M., Bray, J., Chermack, K., Murphy, L. & Kaskubar, D. Getting there from here: Research on the effects of work–family initiatives on work-family conflict and business outcomes. In J.P. Walsh & A. Brief (Eds), *The Academy of Management Annals*, 2008, 2, 305–50.

Kossek, E. Workplace policies and practices to support work and families. In S. Bianchi, L. Casper & R. King (Eds), *Work, family, health, and well-being*. Mahwah, NJ: Erlbaum Press, 2005, pp. 97–116.

Kossek, E.E. & Lautsch, B.A. *CEO of me: Creating a life that works in the flexible job age*. Philadelphia, PA: Wharton School Publishing/Pearson, 2008.

Kossek, E., Lautsch, B.A. & Eaton, S. Telecommuting, control and boundary management: Correlates of policy use and practice, job control, and work–family effectiveness. *Journal of Vocational Behavior*, 2006, 68, 347–67.

Kurland, N.B. & Egan, T.D. Telecommuting: Justice and control in the virtual organization. *Organization Science*, 1999, 10, 500–13.

Lambert, S. Added benefits: The link between work–life benefits and organizational citizenship behavior. *Academy of Management Journal*, 2000, 43, 801–15.

Lee, M.D., MacDermid, S. & Buck, M. Organizational paradigms of reduced-load work: Accommodation, elaboration, and transformation. *Academy of Management Journal*, 2000, 43, 1211–26.

Lee, M., MacDermid, S., Williams, M., Buck, M. & Leiba-O'Sullivan, S. Contextual factors in the success of reduced-load work arrangements among managers and professionals. *Human Resource Management Journal*, 2002, 41, 209–23.

Levine, J.A. & Pittinsky, T. *Working fathers: New strategies for balancing work and family*. New York: Harcourt-Brace, 1998.

Lobel, S.A. & St Clair, L. Effects of family responsibilities, gender, and career identity salience on performance outcomes. *Academy of Management Journal*, 1992, 35, 1057–69.

Madsen, S.R. The effects of home-based teleworking on work–family conflict. *Human Resource Development Quarterly*, 2003, 14, 35–58.

McCloskey, D.W. & Igbaria, M. A review of the empirical research on telecommuting and directions for future research. In M. Igbaria & M. Tan (Eds), *The virtual workplace*. Hershey, PA: Idea Group, 1998, pp. 338–58.

Mokhtarian, P.L. & Salomon, I. Modeling the choice of telecommuting 2: A case of the preferred impossible alternative. *Environment and Planning A*, 1996a, 28, 1859–76.

Mokhtarian, P.L. & Salomon, I. Modeling the choice of telecommuting 3: Identifying the choice set and estimating binary choice models for technology-based companies. *Environment and Planning A*, 1996b, 28, 1877–94.

Mor Barak, M.E. Beyond affirmative action: Toward a model of diversity and organizational inclusion. *Administration in Social Work*, 2000, 23, 47–68.

Nilles, J.M. *Managing telework: Strategies for managing the virtual workforce*. New York: Wiley, 1998.

Nippert-Eng, C. *Home and work: Negotiating boundaries through everyday life*. Chicago, IL: University of Chicago Press, 1996.

Perlow, L. Boundary control: The social ordering of work and family time in a high-tech corporation. *Administrative Science Quarterly*, 1998, *43*, 328–57.

Pless, N. & Maak, T. Building an inclusive diversity culture: Principles, processes and practice. *Journal of Business Ethics*, 2004, *54*, 129–47.

Poster, W. & Prasad, S. Resisting the time bind: A transnational perspective on work–family boundaries from India and the U.S. Working paper, University of Illinois, Champaign, 2003.

Powell, G.N. & Mainiero, L.A. Managerial decision making regarding alternative work arrangements. *Journal of Occupational and Organizational Psychology*, 1999, *72*, 41–56.

Rapoport, R. & Bailyn, L. *Relinking life and work: Toward a better future*. New York: Ford Foundation, 1996.

Rapoport, R., Bailyn, L., Fletcher, J. & Pruitt, B. *Beyond work–family balance: Advancing gender equity and workplace performance*. San Francisco, CA: Jossey-Bass, 2002.

Ryan, A.M. & Kossek, E.E. Work–life policy implementation: Breaking down or creating barriers to inclusiveness? *Human Resource Management Journal*, 2008, *47*, 295–310.

Shellenbarger, S. Some companies rethink the telecommuting trend. *Wall Street Journal. Career Journal*, 2007.

SHRM Foundation. Benefits Survey. Society for Human Resource Management, 2001.

Sturman, M.C. Searching for the inverted u-shaped relationship between time and performance: Meta-analysis of the experience/performance, tenure/performance and age/performance relationships. *Journal of Management*, 2003, *29*, 609–41.

Sutton, K.L. & Noe, R.A. Family friendly programs and work–life integration: More myth than magic? In E.E. Kossek & S.J. Lambert (Eds), *Work and life integration: Organizational, cultural and individual perspectives*. Mahwah, NJ: Lawrence Erlbaum Associates, 2005, pp. 151–70.

Thomas, L.T. & Ganster, D.C. Impact of family-supportive work variables on work–family conflict and strain: A control perspective. *Journal of Applied Psychology*, 1995, *80*, 6–15.

US Census Bureau. *Statistical abstract of the United States: 2002, The national data book, section 12, labor force, employment, and earnings, Table No. 578, persons doing job-related work at home: 2001*. Washington, DC: US Census Bureau, 2002.

Van Dyne, L., Kossek, E. & Lobel, S. Less need to be there: Cross-level effects of work practices that support work–life flexibility and enhance group processes and group-level OCB. *Human Relations*, 2007, *60*, 1123–53.

Wiesenfeld, B., Raghuram, S. & Garud, R. Managers in a virtual context: The experience of self-threat and its effects on virtual work organizations. *Journal of Organizational Behavior: Trends in Organizational Behavior*, 1999, *6*, 31–44.

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