Telecommuting: Justice and Control in the Virtual Organization

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Abstract
The adoption of telecommuting raises concerns for both managers and employees: Remote supervision presents monitoring challenges, while physical isolation may impede the employee’s opportunity for, and involvement in, determining valued organizational outcomes (organizational justice). This study of 191 employees examined the relationships among telecommuting, organizational monitoring strategies, and organizational justice perceptions. Results suggest that monitoring strategies were more strongly associated with organizational justice perceptions than with telecommuting, and procedural and interactional justice perceptions related significantly to telecommuting. We provide implications, limitations, and ideas for future research. (Justice; Telecommuting; Virtual Organization; New Organization Forms)

Introduction
Recent attention has focused on changing organizational forms designed to increase employee autonomy and control over their organizational lives. Capturing some of this attention is the arrival of the virtual organization, with telecommuting taking center stage. Telecommuting, the substitution of telecommunications for physical travel to the organization, is becoming more common. It is a work design that liberates one from time and space and in which work is an activity, not a place.

Estimates of the number of telecommuters in the U.S. vary, but most figures range from between three and nine million people (roughly three to eight percent of the workforce). These figures include people who work from home at least several days per month of their normal work schedule (Weiss 1994, Korezeniowski 1997, Piskurich 1996). Forecasts for the U.S. in the year 2000 vary considerably—from 15 million workers (Piskurich 1996) to 44 million workers (Langhoff 1997) to 57% of the workforce (Smith 1994). Estimates for European countries vary—some place the number of teleworkers of all types in the U.K. at four percent of the workforce (Pancucci 1995). Always, though, the number of telecommuters is expected to continue to rise (Russell 1996, Edwards and Field-Hendrey 1996).

While the popular press is noting its arrival (e.g., Hammonds et al. 1997), little academic research has examined the effect telecommuting may have on the nature of the relationship between the individual employee and the organization. This lack of empirical and conceptual attention is curious given the likelihood that telecommuting will change the very way we define these relationships. At the most basic level is a question of whether this organizational form is liberating or oppressive, a question Weber (1910; reprint, 1978) asked regarding the bureaucratic form nearly a century ago.

The tension implied above plays out in commonly cited advantages and disadvantages attributed to the telecommuting phenomenon. From the managerial perspective,
Concern centers on the challenge of monitoring the performance of employees whom supervisors can no longer physically observe. Managers may find solace in more formal interactions, more structured job guidelines, or by focusing on results. By comparison, employees are concerned that their physical absence from the office’s social network impedes the justice and fairness of their organizational outcomes (distributive justice), procedures (procedural justice), and relationships (interactional justice). Perceptions of organizational justice affect both economic performance and employee well-being (e.g., Folger and Konovsky 1989, Egan 1993, Skarlicki and Folger 1997).

In this study, we begin to explore the impact of telecommuting on organizational relationships by examining the association between telecommuting and employees’ organizational justice perceptions and the degree to which monitoring strategies moderate these relationships. This study is exploratory in nature and is the first to our knowledge to examine the relationship between telecommuting and justice concerns.

Theory and Hypotheses

Telecommuting: A Brief Overview

Telecommuting, referred to as teleworking in Great Britain, is the act of working outside the conventional workplace, e.g., at home, and communicating with the conventional workplace by way of computer-based technology (Nilles 1994). Three types of telecommuting locations are most common (Olson 1982): satellite work centers, neighborhood work centers, and home-based work centers. In satellite work centers, the employee works both outside of the home and away from the conventional workplace in a location convenient to the employee and/or customers. The neighborhood work center is essentially identical to the satellite work center, with one major difference—unlike the satellite work center, which houses only one company’s employee(s), the neighborhood work center houses more than one company’s employees. Lastly, home-based work centers exist when employees work at home on a regular basis. Working from home is the most common form of telecommuting and is our primary focus here. Nevertheless, when we refer to “telecommuting,” we include teleworkers who work in at least one of these three different types of telecommuting locations.

Telecommuting has the potential to benefit employers, employees, and society. Some researchers conclude that telecommuting increases employees’ productivity because employees experience greater schedule flexibility and autonomy, allowing them to work during times they work best (Olson 1982, Alvi and McIntyre 1993, Salomon and Salomon 1984, Venkatesh and Vitalari 1992). Others find that certain jobs are especially amenable to telecommuting, such as field sales (Nilles 1994: p. 26–28, Venkatesh and Vitalari 1992). In short, claims that telecommuting benefits employees center around issues of commute-related stress reduction, increased flexibility and control over work schedules, fewer office distractions, and reduced work-family conflicts (e.g., Becker 1986, Hill et al. 1996, Mokhtarian and Salomon 1997).

In addition, telecommuting gives organizations more options. First and foremost, it enables organizations to cut costs related to office space, as well as address space constraints. IBM recently reported a $75 million annual savings in real estate expenses as a result of telecommuting (Egan 1997). Also, because employees no longer have to physically commute to a common workplace, companies have access to a wider talent pool. Companies can hire people who are “mobility impaired” and, thereby, better comply with the Americans with Disabilities Act (Matthes 1992; also see Stone and Colella 1996). Furthermore, companies can avoid discrimination against employees on the basis of appearance because employees may no longer be physically seen (Olson 1982, Salomon and Salomon 1984). And telecommuting benefits society because employees are commuting less, which reduces air pollution and traffic congestion (e.g., Alvi and McIntyre 1993, Salomon and Salomon, 1984).

Yet, telecommuting is not without its disadvantages. The two most commonly cited are the monitoring challenges supervisors face in managing employees they cannot physically see, and the isolation that telecommuters experience because they are physically absent from the human network in the conventional workplace (e.g., Broder 1996, Evans 1993, Tomaskovic-Devey and Risman 1993, Wright and Oldford 1993, Salomon and Salomon 1984). In the remainder of this paper, we examine these monitoring and isolation challenges.

Managers and Monitoring

Managers’ primary reluctance about telecommuting rests on concerns of control. They question, “How do you measure productivity, build trust, and manage people who are physically out of sight?” (Mason 1993). Because telecommuters are physically out of sight, supervisors need to rely on measures other than physical observation to control and monitor performance. The solution for many organizations may be to resort to output controls and assign telecommuters projects whose outcomes are easily measured (Olson 1982, Hamblin 1995). For example, Olson (1982: p. 83) found that monitoring of telecommuters’ performance tended to be “based on results, the
quality and timeliness of completed work, rather than observation" for more effective supervision. Output controls, such as these, allow the supervisor to rely on measures other than physical observation to control behavior and provide subordinates with discretion over the means they use to achieve organizationally determined goals (Ouchi 1979).

Other strategies are more behavioral in nature and include formalizing (1) job requirements and performance standards, and (2) communication. For example, Zuboff (1982; p. 147) and Olson (1982) found that performance evaluation, when monitored remotely, became increasingly formalized through greater institutionalization of rules. As the manager's ability to physically supervise employees declined, clearly specified job descriptions and performance standards ensured the subordinate's ability to perform well. In a like manner, the greater the physical distance between supervisor and subordinate, the less likely the supervisor may rely on informal, spontaneous communication patterns to convey information (e.g., Katz and Kahn 1978, Sundstrom et al. 1990).

In light of this previous research, we highlight three strategies supervisors can use to remotely control employee behavior: (1) a reliance upon objective, written records of results as compared to supervisors' subjective evaluations, (2) the availability of written job descriptions and performance requirements for a particular position, and (3) formalized communication between employees and supervisors.2

Employees and Professional Isolation
Employees' primary reluctance about telecommuting rests on concerns of isolation (Olson 1982, Hartman et al. 1991, Holcomb 1991, Wright and Oldford 1993). Two types of isolation are relevant: professional and social. Professionally, employees fear that being "out of sight" means being "out of mind" for promotions and other organizational rewards. Socially, employees comment that they miss the informal interaction they garner by being in the presence of colleagues and friends. Whether telecommuters experience social isolation may largely depend on if they work at home, where feelings of social isolation may be strong, or at a satellite office or neighborhood work center, where such isolation is less likely. By comparison, telecommuters may experience professional isolation at any of the three types of telecommuting locations. Obviously, if telecommuters work at home or at a neighborhood work center, they are physically separated from the larger organization. Similarly, satellite center telecommuters are physically absent from their central office and so may be professionally isolated. In

the present study, we focus only on professional isolation concerns, saving examination of social isolation for future research.

Professional isolation concerns reflect the possibility that telecommuting may change employees' opportunities for participating in, and receiving the benefits of, organizational membership. In this study, we examine this possibility more closely. One perspective that may be useful for understanding these concerns is organizational justice. Like nontelemcommuting employees, telecommuters seek to ensure that they receive outcomes they believe they deserve (distributive justice), have a voice in the process by which these outcomes are determined (procedural justice), and receive fair treatment and respect from their supervisors (interactional justice). Yet, unlike nontelemcommuting employees, telecommuters are physically absent from the traditional office at least part-time, and sometimes full-time, and this absence may impede their opportunity for organizational justice. Below, we explore the links among organizational justice perceptions, telecommuting, and managerial control.

Telecommuting, Organizational Justice, and Managerial Control

Distributive Justice. Distributive justice refers to perceptions about the fairness of the outcomes themselves. It focuses on employees' perceptions regarding whether they receive the outcomes they believe they deserve. Telecommuting can impact distributive justice perceptions in at least two ways. One, telecommuters can view their option to telecommute as a reward in itself, in which case telecommuting should be positively related to distributive justice. On the other hand, telecommuters may perceive they will be denied promotional opportunities because they are physically isolated from the organization. More specifically, telecommuters—employees who are not around the organization every day—may be overlooked, forgotten, or rejected when important assignments are meted out. Even employees who are rewarded with the opportunity to telecommute may perceive their future distribution of rewards and promotions as limited because they have chosen to telecommute rather than be on-site and, consequently, in sight and on call. Noticeably, distributive justice can be related to telecommuting both negatively and positively. In this study, we seek to uncover relationships; hence, we refrain from predicting a specific direction. Instead, we formally hypothesize that telecommuting and distributive justice will be significantly related.

Hypothesis 1. Telecommuting will be related to distributive justice perceptions.

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Theories of work motivation (Porter and Lawler 1968, Adams 1963) suggest that increasing evaluation based on clear and measurable performance outputs should enhance the individual’s belief that one is rewarded based upon an equitable assessment of one’s work efforts and contributions. Also, when people perceive that clear standards and acceptable communication channels exist, they are more likely to work to meet these standards and accept rewards as fair when they are based on these standards (e.g., Folger and Konovsky 1989, Brockner and Siegel 1996). This research demonstrates that the managerial control strategies discussed earlier may positively moderate the impact of telecommuting on distributive justice.

Accordingly, ceteris paribus, we predict the following hypotheses:

**Hypothesis 1a.** Employees’ perceptions of the use of outcome-based, as opposed to subjective, indicators to evaluate their performance will moderate the relationship between telecommuting and their distributive justice perceptions.

**Hypothesis 1b.** Employees’ perceptions of the use of formal communication with supervisors will moderate the relationship between telecommuting and their distributive justice perceptions.

**Hypothesis 1c.** Employees’ perceptions of the existence of formal job descriptions and performance standards will moderate the relationship between telecommuting and their distributive justice perceptions.

**Procedural Justice.** Where distributive justice focuses on outcomes received, procedural justice diagnoses the process by which these outcomes are distributed: Is the process fair? Does it ensure that I will receive the outcomes I believe I deserve? Was my input requested and valued? The isolating effects of telecommuting may impede these structural elements of procedural justice. With the telecommuter physically absent from the workplace, can she be certain that the right procedures are followed? Will he have an opportunity to voice dissent to reverse decisions in time to make an impact? Will she get advance notice of changing requirements, impending demands, etc.? On the other hand, the same isolating effects of telecommuting may encourage the structural elements of procedural justice. For example, supervisors may take precautions to ensure that telecommuters are informed about important organizational information. Hence, once again we refrain from predicting a specific direction. Instead, we formally hypothesize that telecommuting and procedural justice will be significantly related:

**Hypothesis 2.** Telecommuting will be related to procedural justice perceptions.

Procedural justice refers to perceptions related to structural characteristics of the formal and informal organizational systems, policies, and procedures used to generate valued organizational outcomes (e.g., the performance appraisal system, promotion policies). When rules are standardized and formalized and applied consistently (consistency rule), perceptions of bias diminish (Thibaut and Walker 1975, Leventhal, 1980), enhancing perceptions of procedural justice (Folger and Konovsky 1989). On a related note, people perceive procedural justice when members have regular channels for questioning whether the roles themselves are inherently just (correctability and ethicality rules) (Leventhal 1980).

As such, when mechanisms to monitor and control employee behavior become standardized and formalized, control can be proffered by way of offices and roles, rather than by individuals. Goals are then clearly specified and embedded in the organization itself, rather than in fluctuating relationships, enabling more opportunities for perceived objective rules to govern relationships (Scott 1992).

Such mechanisms must be in place to assure telecommuters that their performance evaluations are in accord with those of their in-office counterparts (Hartman et al. 1991). Therefore, selected control strategies associated with telecommuting should positively moderate telecommuting’s impact on procedural justice perceptions because these control strategies provide the employee with formal, institutionalized access to, and understanding of, organizational rules and decisions. Accordingly, ceteris paribus, we predict that three specific control strategies will positively moderate the impact of telecommuting on procedural justice perceptions:

**Hypothesis 2a.** Employees’ perceptions of the use of outcome-based, as opposed to subjective, indicators to evaluate their performance will moderate the relationship between telecommuting and their procedural justice perceptions.

**Hypothesis 2b.** Employees’ perceptions of the use of formal communication will moderate the relationship between telecommuting and their procedural justice perceptions.

**Hypothesis 2c.** Employees’ perceptions of the existence of formal job descriptions and performance standards will moderate the relationship between telecommuting and their procedural justice perceptions.

**Interactional Justice.** Formal organizational structures are set up to administer and yield outcomes such as
compensation, performance ratings, and promotions, as well as to resolve disputes related to the administration of such outcomes. The formal nature of organizational outcomes is recognized in both distributive and procedural theories of organizational justice. Yet, valued individual outcomes also result from relationships with supervisors and coworkers in organizations. In general, people want their supervisors and coworkers to treat them with respect, consideration, and trust (e.g., Lind and Tyler 1988, Mikula et al. 1990). And individuals depend on their supervisors to fairly implement procedures which may lead to valued outcomes, such as pay raises and performance ratings.

Bies and Moag (1986) first introduced interactional justice as a third component of organizational justice. However, typically, researchers exploring interactional justice have defined it as a component of procedural justice, while simultaneously measuring and testing it as if it were a separate construct (e.g., Skarlicki and Folger 1997, Moorman 1991). For example, Skarlicki and Folger (1997: p. 436) argue that in the case of employees who believe their supervisors treat them fairly (interactional justice), the need for formal procedural fairness (procedural justice) should diminish. Hence, they treat interactional justice as distinct from procedural justice, not as a component of it. In other research, Mikula et al. (1990: p. 143) advocate that we “… regard the manner of interpersonal treatment as an independent subject of justice evaluations rather than to subsume it under the concept of procedures.” Still further, others urge that the construct should combine a concern for the nature of one’s treatment by those who have power or influence, rather than subsuming the fairness of formal procedures and the fairness of treatment by authorities under one concept of procedural justice (Egan 1993). Accordingly, we treat interactional justice as a construct separate from procedural justice and as one that considers the fairness of a supervisor’s interpersonal treatment during implementation of procedures.

On the one hand, telecommuting can negatively influence interactional justice because there may be fewer opportunities for supervisors to demonstrate their interpersonal treatment with telecommuters. On the other hand, since managers question whether telecommuters work when they are not physically on-site, it follows that supervisors will allow only those employees they trust to telecommute. By allowing an employee to telecommute, a manager exhibits trust in that employee—trust that the employee may perceive as evidence of fair, if not favored, treatment. Again, due to the discovery nature of this study and the plausibility of competing hypotheses, we do not predict a direction; rather, ceteris paribus, we predict the following:

**Hypothesis 3.** Telecommuting will be related to perceptions of interactional justice.

The use of objective methods to evaluate performance and of formal written performance standards and job descriptions limits a supervisor’s ability to implement standards in a way the employee may deem as unfair (Barling and Phillips 1993). Additionally, an important element of relationship building is acting at ease with, and exhibiting trust in, the other person. One aspect of such ease is informal, spontaneous communication—the act of dropping by someone’s office, or phoning someone to chat and convey information informally. Accordingly, ceteris paribus, here again we predict that three selected managerial control strategies will moderate the impact of telecommuting on interactional justice perceptions:

**Hypothesis 3a.** Employees’ perceptions of the use of outcome-based, as opposed to subjective, indicators to evaluate their performance will moderate the relationship between telecommuting and their interactional justice perceptions.

**Hypothesis 3b.** Employees’ perceptions of the use of formal communication will moderate the relationship between telecommuting and their interactional justice perceptions.

**Hypothesis 3c.** Employees’ perceptions of the existence of formal job descriptions and performance standards will moderate the relationship between telecommuting and their interactional justice perceptions.

**Methods**

**Sample**

We accessed our sample through a national telecommuting trade association. We systematically called members until we had 18 organizations willing to participate in our study. Eight organizations were dropped since they failed to return any surveys. One organization was added to replace one of these eight. Our final sample consisted of 11 organizations with a collective total of 258 active telecommuters. In all organizations, participation in the telecommuting programs was voluntary. These 11 organizations consisted of 4 telework centers (neighborhood work centers), 3 technology-related companies, 1 service organization, 2 leisure-related companies, and 1 city government. We instructed our organization contacts to match a sample of nontelecommuting employees with their telecommuting employees on job type and level.
Surveys were mailed to 496 identified employees, whose frequency of telecommuting in a given week ranged from 0% to 100% of the time. One hundred and ninety-one returned completed, usable surveys for a response rate of 38.5%. One hundred and eleven of these employees considered themselves active telecommuters. All respondents who telecommuted had been telecommuting for less than 7 years with 72% doing so for less than 2 years.

In addition, the majority (55%) of employees responding had worked in their current jobs for 4 years or less, and 51.9% had been with their current organizations for 7 years or less. Respondents’ ages ranged from 22 to 65, with an average age of 41.45 years. Sixty-six percent of the employees who responded were female. Respondents held an average of 4.7 years of post-high school education. Ethnicity of the sample broke down as follows: 80% white; 5% Hispanic; 7% Asian; 3% African-American; 3% Arab-Iranian; 4% other. We recorded 31 different job types, with 6 job types—clerical, manager, professional, sales, support, and technical—accounting for 65% of the respondents.

**Measures**

To measure telecommuting, we asked employees to indicate the percentage of the time in their workweek that they spent telecommuting. To measure formal job guidelines, formal communication, distributive justice, procedural justice, and interactional justice, we relied on Likert-type, multi-item scales drawn from well-validated measures (see below). To measure outcome-based evaluation, we used a five-point scale anchored at one end with, “My supervisor’s evaluation is of greatest importance,” and at the other with, “Written records of results are of greatest importance.”

Figure 1 presents sample items and scale alphas for each of the control and justice variables. Job formalization consists of four items we developed based on a conceptual definition of formalization drawn from Inksn et al. (1970) and Hage (1974). Outcome-Based Evaluation consists of eight items adapted from Ouchi (1977), Greenhaus et al. (1990), and Toulouw et al. (1984) and measures the extent to which records of output, rather than supervisors’ observations of behavior, form the basis for evaluations. Formal communication consists of two items adapted from Burgoon and Hale (1987). Distributive justice consists of the six items from Price and Mueller’s (1986) Distributive Justice Index. Procedural justice consists of six items using procedural characteristics drawn from Leventhal (1976) and as developed by Moorman (1991) and Niehoff and Moorman (1993). To measure interactional justice, we combined items from Moorman’s (1991) and Niehoff and Moorman’s (1993) interactional dimension of procedural justice measure.

**Results**

Means, standard deviations, Pearson correlations, and Cronbach alphas were computed for the independent, moderating, and dependent variables (Figure 1 and Table 1).

To test Hypotheses 1, 2, and 3, we regressed distributive, procedural, and interactional justice perceptions, respectively, on employees’ reports of telecommuting.

Following Baron and Kenny (1986), we tested for moderation (i.e., Hypotheses 1a–1c, 2a–2c, and 3a–3c) using linear regression equations (Table 2). For example, to test Hypothesis 1a, we regressed distributive justice perceptions on telecommuting, outcome-based evaluation reports, and the product of telecommuting and outcome-based evaluations. To establish that outcome-based evaluations moderate the relationship between telecommuting and distributive justice, we would expect the product to be significant. For all equations, we controlled for employees’ age, education, ethnicity, gender, job type, years in their current job, and years with their current organization.

**Telecommuting and Organizational Justice**

Telecommuting related positively to both procedural and interactional justice perceptions, therefore supporting Hypotheses 2 and 3. It did not relate at all to distributive justice perceptions and, therefore, we find no support for Hypothesis 1. (See Table 2.)

**Telecommuting, Organizational Justice, and Managerial Control**

None of the three managerial control strategies examined (outcome-based evaluation, communication formality, and job formalization) moderated the relationship between telecommuting and the three types of organizational justice. Therefore, we find no support for Hypotheses 1a–1c, 2a–2c, or 3a–3c. Instead, we found that (1) communication formality directly correlated with all three forms of justice, (2) job formalization correlated significantly with procedural and interactional justice perceptions and modestly with distributive justice perceptions, and (3) outcome-based evaluations had no relationship with any form of justice. Below we examine the implications and limitations of these findings, as well as ideas for future research.

**Discussion, Limitations, and Future Research**

**Telecommuting and Organizational Justice**

The results suggest that telecommuters perceived as just the processes by which their outcomes were determined
(procedural justice) and that their supervisors treated them fairly and with respect (interactional justice); however, telecommuting was not related, positively or negatively, to employees’ perceptions that they received the outcomes they believed they deserved (distributive justice).

An explanation for the positive relationship between telecommuting and procedural justice lies in our original supposition that telecommuting engenders the structural elements of procedural justice. More precisely, using face-to-face interaction or e-mail, supervisors can ensure that telecommuters have access to information and a voice in processes that affect them. In addition to the survey data, we conducted several semistructured interviews with telecommuters and their supervisors. The manager we quote below described the precautions he took to ensure he remained informed about his telecommuter’s activities.

I would say . . . on the average, I [communicate with the telecommuter compared to the nontelecommuters] a little bit more . . . [Suppose she’s doing something and that particular thing is on the critical path. Because I can’t simply count on her being at her desk to check to see how something’s going all the time, I always want to be very proactive about making sure that I know how things are going, where she’s going to be at, and that things are going okay. And if any key communication needs to happen, that they’re going to be happening on schedule. So what I would do is, it would take a little bit more effort on my part, communicate[ing] with her and kind of make sure that we keep each other comprised of where each other are, and so forth—that we always know how things are going and that it’s [sic] going smoothly.

The manager quoted above sat nearby the telecommuter, allowing him to proactively communicate with her face-to-face on her nontelecommuting days. However, managers can also use e-mail to disseminate information quickly and consistently. To test this idea, we analyzed the data further to determine whether e-mail use mediated the relationship between telecommuting and procedural justice perceptions. We assumed that the more people worked off-site, the more they relied on e-mail to communicate to people on-site. In addition, research has demonstrated that electronic mail is more effective in increasing the range, amount, and velocity of information and communication of unequivocal information (McKenney et al. 1992), whereas face-to-face communication is more effective in situations where levels of ambiguity and uncertainty are high, and in socially sensitive and intellectually difficult interactions (Nohria and Eccles, 1992;
Trevino et al. 1987, Daft and Lengel 1984, Allen and Hauptman 1990, Culnan and Markus 1987). Hence, if many people receive the same e-mail message on the basis of simultaneous transmission, this may satisfy Leventhal’s procedural justice criterion of consistency across people. Indeed, we found that e-mail significantly mediated, albeit modestly, the telecommuting-procedural justice relationship. In virtual organizations, e-mail may be more likely than other forms of communication to foster “voice,” a necessary component of procedural justice.

Turning to interactional justice, one explanation for the positive relationship between it and telecommuting is that supervisors may perceive individuals who telecommute as more trustworthy. Given that monitoring out-of-sight behavior tops the list of managers’ concerns about telecommuting, a likely solution is to select only “trustworthy” employees to telecommute. In fact, telecommuting is often recommended as a vehicle by which to reward high performing individuals who can be trusted to perform well in unstructured environments (Nilles 1994). By choosing an employee to telecommute, the supervisor obtains confidence in, and professionally validates, the employee. From the follow-up interviews, we learned that some supervisors identified individuals who they believed could work effectively away from the office, and then offered the telecommuting option to these selected individuals. One supervisor even insisted that an individual exhibit the traits necessary to successfully telecommute before he would hire that person.

A second reason for the positive relationship between interactional justice and telecommuting may be that supervisors demonstrate consideration for employee needs around work-family issues, freedom from distraction, and commute issues when they allow their employees to telecommute. To pursue this idea indirectly, we divided the reports of telecommuting into three groups: nonelectromuters, employees who telecommute less than 30% in a given week (less active telecommuters), and employees who telecommute at least 30% in a given week (active telecommuters). We chose this breakdown based on recommendations that telecommuters should split their time between home and office, and which specifically encouraged part-time (one–two days/week) telecommuting (e.g., Nilles 1994, Goodrich 1990). We found that active telecommuters seemed more satisfied with their supervisors than those who telecommuted less or not at all ($F = 2.50 +$). This finding parallels an additional one that more active telecommuters and nonelectromuters perceived higher interactional justice than did their colleagues who telecommuted less actively ($F = 4.54 +$).

A third reason why telecommuting and interactional justice related positively may be linked to communication topics. Telecommuters communicated to supervisors about a wider range of topics than did nonelectromuters. For example, we found that active telecommuters spent more time communicating with their supervisors about personal, non-work-related topics than did less active telecommuters ($F = 2.47 +$), although we found no differences with respect to work-related topics across the three levels of telecommuting. Instead, differences in work-related communications emerged when we examined e-mail use specifically. Here we saw that active telecommuters used e-mail less to communicate about work-related topics with their supervisors than did non-and less active telecommuters ($F = 3.23 +$). We did find, however, that active telecommuters used e-mail more to communicate about personal topics than did non- and less active telecommuters ($F = 4.39 +$). Thus, the consideration component of interactional justice may be enhanced by these
## Table 2  
Hierarchical Regression for Moderating Effects of Control Strategies Between Telecommuting and Justice Perceptions

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<td>Job Years</td>
<td>0.026</td>
<td>0.033</td>
<td>−0.053</td>
<td>−0.016</td>
<td>0.085</td>
<td>0.074</td>
<td>0.068</td>
<td>0.109</td>
<td>0.143+</td>
<td>0.155+</td>
<td>0.071</td>
<td>0.133</td>
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<td>Organization Years</td>
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<td>0.069</td>
<td>0.067</td>
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<td>0.092</td>
<td>0.103</td>
<td>0.088</td>
<td>0.007</td>
<td>−0.066</td>
<td>−0.077</td>
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<td>Telecommuting</td>
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<td>0.300</td>
<td>0.358</td>
<td>0.468</td>
<td>0.202*</td>
<td>−0.238</td>
<td>0.469</td>
<td>0.386</td>
<td>0.228**</td>
<td>0.231</td>
<td>0.531+</td>
<td>0.324</td>
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<td>−0.450</td>
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<td></td>
<td>0.200*</td>
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<td>−0.048</td>
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<td>Formal communication</td>
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<td>0.315**</td>
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<td>0.319**</td>
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<tr>
<td>Job F. x Tel</td>
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<td>−0.178</td>
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<td>0.045</td>
<td>0.135</td>
<td>0.068</td>
<td>0.091</td>
<td>0.103</td>
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<td>0.675</td>
<td>0.620</td>
<td>2.115*</td>
<td>0.969</td>
<td>1.676</td>
<td>1.478</td>
<td>1.774+</td>
<td>2.412*</td>
<td>2.424*</td>
<td>2.044*</td>
<td>3.590***</td>
<td>3.171***</td>
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*aStandard coefficients are provided. Significance levels (two-tailed): ***p < 0.001; **p < 0.01; *p < 0.05; +p = 0.051; +p < 0.10; Cases deleted listwise.*
increased amounts of personal conversation and are not impeded if they occur primarily by e-mail.

Differently, the lack of relationship between telecommuting and distributive justice was surprising. While the aggregate findings did not support our contention that individuals, in general, perceive telecommuting itself to be a reward, the supplemental interview data revealed that some employees did view telecommuting in this way. Moreover, we found no general support for the proposition that employees perceive telecommuting as diminishing their receipt of deserved rewards. The lack of these results points to the need for more research to understand why, despite our findings, telecommuters may still equate being “out of sight” to being “out of mind” for promotions and other organizational rewards. That none of the three hypothesized control strategies moderated the relationship between telecommuting and distributive justice, or procedural justice or interactional justice, adds to the mystery and is discussed in detail below.

None of the three strategies that the literature pointed to as practical devices managers can use to control telecommuters’ behavior significantly moderated the relationships between telecommuting and organizational justice perceptions. Rather, except for outcome-based evaluations, each related directly to organizational justice perceptions. Ironically, the latter is a limitation of the current study in that two of our most significant findings reveal direct, rather than moderating, relationships.

A reason for the absence of effect of outcome-based evaluation on justice perceptions may lie in how it was measured. In particular, the two anchors we used for measurement, “my supervisor’s evaluation is of greatest importance,” and “written records of results are of greatest importance,” may ignore the fact that the performance evaluations are based not only on objective performance (results), but also on supervisor evaluations, which may in turn rely on written records of results. In future research, scholars might unlink these two anchors and consider them separately.

By comparison, we found that employees who believed that their supervisors related to them casually and informally perceived higher levels of distributive, procedural, and interactional justice. One explanation is that the presence of informal communication channels increased a supervisor’s discretionary interaction with his or her employees, allowing for the use of justifications (Bies 1987) to deliver good and bad news about outcomes and processes, and for enhancing trust and relationship building. Along these lines, research has shown that spontaneous, informal interaction among group members enhances productivity and builds trust (Argote 1993, Kraut et al. 1990).

Notwithstanding these findings, we believe that limits of the survey methodology may have resulted in an underreporting of this relationship. Future research might highlight scheduled interaction rather than focusing only on formal or informal communication. Comments from the follow-up interviews illustrated that supervisors interacted casually with employees and scheduled times to (1) teleconference and/or (2) physically meet with subordinates during a given day, week, or month, and that this formalized communication was especially relevant to (1) mobile or telecommuting managers, (2) remote managers (i.e., managers and subordinates who worked in offices but who may be located in different parts of the country), and (3) managers who believed that their employees needed to interact with one another to perform their jobs effectively. One manager’s comment is representative:

[In our environment I have meetings, audio meetings... scheduled every week. The first thing we kind of do is smile at each other over the telephone and say, “Now where are you this morning?” Somebody may be in San Diego, in Anaheim, in L.A., you never know where you’re going to find somebody, right? But, from a training perspective, we have regularly scheduled weekly team meetings for both our field service and sales groups where everybody gets together and they are in the same room. You know, they can all look at each other. And that may be the only time that everybody’s together.]

However, such arranged meetings may be deemed less necessary if telecommuters’ jobs require little coordination and idea generation with colleagues. Future research should examine the nature of these communication exchanges in greater detail and the influence on them of task interdependence.

In the case of job formalization, results supported the idea that more structurally-oriented monitoring variables are significantly related to employees’ organizational justice perceptions. These results support past research in procedural justice. However, that specified job performance and standards would moderate telecommuting’s impact on procedural justice was not supported. Indeed, we had speculated that with telecommuting came fewer opportunities to interact with colleagues and supervisors in real time, fewer opportunities to learn by doing by way of interactive actions, and fewer opportunities to ask questions and brainstorm for answers. And, instead, since both telecommuters and supervisors did not have ready access to one another, job formalization would anticipate questions, capture potential difficulties, and resolve in advance any ambiguities telecommuters might foresee. Our results suggested otherwise. Future research should explore the effect of job formalization on alternative work forms in greater detail.
Additional Avenues of Future Research

Additional research can also examine how telecommuting affects relationships among team members. Do team members recognize telecommuters for their efforts even though they are physically off-site and out of sight? Do team members remember to contact telecommuters for their input on projects? Do team members treat telecommuting employees respectfully and considerately? Consider the following comment from an employee who had been telecommuting for four years:

[A project was on] a real fire storm project. There were people working all hours of the day and night to get this thing out and some key decisions were made. You come to a point when a decision has to be made and you have to make whether you were there or not and so you could be working on something at home and then the whole tenor of the project changed when you came back in; it's like, "Okay so I just wasted six hours, fine yeah." That kind of thing.

[S]o you have to sort of be there because it's sort of happening really quickly and if you're telecommuting, even though there are things like e-mail and voice mail and other[s], things are happening really quickly. People don't think to call you up and tell you this is happening or to ask your opinion on that.

To avoid needless work and to stay abreast of her dynamic work environment, this telecommuter needs to improve the level of communication between herself and her nontelecommuting colleagues. Related to her experience, research can explore how virtual teams effectively communicate and collaborate.

Future research can also consider the phenomenon of mobile working and distinguish it from telecommuting. Even in the present study these two may have been considered synonymous. However, stark differences do exist (Kurland and Bailey, forthcoming). Telecommuting generally refers to working from one location and electronically communicating to the office, whereas mobile working refers to working while one is continually on the move. Telecommuters work from either their home or the traditional office during a given week; the mobile worker may work from several offices and several cities in a given week. Each has significantly different advantages and disadvantages and needs to be studied separately. Related to this research is remote managing and mentoring. How do managers effectively manage, train, and develop employees who not only telecommute, but live in a separate state or country?

A limitation of the present study was the static nature of our model. An alternative approach in future research would be to investigate pretelecommuting and posttelecommuting effects. Additionally, future studies can develop more complex models to understand the dynamic potential of the supervisor/subordinate telecommuting relationship—focusing on dyads rather than employees' perceptions alone. For example, if an employee frequently telecommutes, how does this fact influence a supervisor's attempts to see the employee face-to-face? In addition, future studies should include information about the parameters of the telecommuting programs studied. For example, it might be fruitful to understand why organizations had instituted telecommuting programs (e.g., as cost-cutting measures; to comply with government regulation; to illustrate a concern for work-family balance; to satisfy a desire to reduce traffic congestion and air pollution) and whether the programs themselves were mandated or voluntary within the organization, or by forces external to it.

Research can also target power distribution transformations as people detach their work from a place. Might people on-site gain power because they can network face-to-face more readily with colleagues? Or might people off-site accrue influence if they reach beyond organizational boundaries to initiate, develop, and maintain professional contacts?

Because telecommuters are separated from the traditional office, telecommuters may be less socialized in the organization's culture, and their loyalty towards the organization may decline. Corporate cultures provide organizational members with shared norms, values, and expectations to help them survive uncertainties encountered daily. Corporate cultures are produced by members acting collectively to create "repositories of what their members agree about" (Trice and Beyer 1993, p. 5). Future research should examine whether telecommuting presents a challenge to maintaining a corporate culture because organizational members who telecommute are no longer physically embedded in these central "repositories" of beliefs and values. Said differently, first, if employees feel increasingly isolated from the traditional workplace, the telecommuter may fall outside the informal network and the organization's socialization process, and no longer be enmeshed in the corporate culture. Telecommuting fosters and rewards individualism, which may also act to hinder the telecommuter's sense of a shared corporate or team purpose. Second, implications abound regarding the changes that may occur in the corporate culture after the employees selected to telecommute effectively leave the organization. Which values do they take with them? Which values will change and which will dominate? Future research can also compare international experiences with telecommuting. To date, research, for example, appears on the British (e.g., Hamblin 1995) and Japanese experiences (e.g., Mokhtarian and Sato 1994), but remains limited and not readily available.
Conclusions and Recommendations

Telecommuting has the potential to benefit individuals, organizations, and society. To date, little empirical research has been devoted to examining its social and behavioral implications for intraorganizational relationships. This exploratory study began empirical inquiry into relationships between and among telecommuting, managerial control, and organizational justice (reflecting telecommuters’ professional isolation concerns). In doing so, we found evidence that elements of the virtual organization form may have unintended consequences not only on material variables, such as productivity, but also on ideal values, such as perceived justice. Moreover, although we did not find support for many of our hypotheses, this lack of findings took on sufficiently interesting value, pointing to numerous avenues of future research.

For example, the finding that telecommuting is positively associated with procedural and interactional justice, but not with distributive justice, has interesting implications. First, it suggests that at least some of the concerns and fears expressed by employees are not borne out by the experiences of the telecommuters in this study. Rather, of greater import is job formalization and the ability of supervisors to communicate with employees in a way that is deemed casual and informal, and perhaps more personal.

Second, telecommuting programs have the potential to enhance employees’ perceptions of the fairness of organizational procedures and interactions. Interestingly, both procedural and interactional justice are linked to positive institutional evaluations, particularly in contexts where potentially negative outcomes may occur, such as finding for the other party in a dispute or organizational layoffs and downsizing. The adoption of telecommuting programs might be particularly important given that the current labor market is characterized by a reduction in the employee’s commitment to specific organizations and a shortage of skilled labor in many job types and industries.

Third, industry consultants and trade publications dictate that to telecommute successfully, employees’ performance evaluations should be based on observable, measurable outcomes, supervisors should formalize interaction with subordinates and among team members, and job responsibilities should be clearly specified. That we found few significant relationships between telecommuting and these three monitoring strategies is therefore troubling and suggests that few organizations may actually implement these best practice recommendations, or do so effectively.

In sum, though, our results suggest that telecommuters feel they are treated fairly and with respect, and have input and voice in the processes that affect them.

Acknowledgments

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Endnotes

1 Although some employees, for example, those in sales, have long spent much of their time outside of the traditional office, the advent and spread of electronic telecommunications has the potential to alter organizational boundaries in ways that parallel the formation of the modern M-form corporation during the middle part of this century.

2 “Supervisor’s evaluations” refers to the managers’ use of their own observations and personal evaluations to assess the employee’s performance. “Written records of results” refers to the managers’ reliance upon written records of output or results, such as sales volume, orders taken, predetermined objectives achieved, software code written, and so on, to determine the employee’s performance. “Job formalization” refers to the degree to which formal job descriptions and performance standards exist for the employee. “Formal communication” refers to the degree to which supervisors interact formally (or informally) with the employee.

3 To gain access to the sample we were not provided with the actual names of the employees in the sample. Hence, we do not know precisely which employees returned surveys. We interviewed employees and their supervisors who had had the opportunity to participate in the survey; however, we do not know if they actually did. Nevertheless, during the interviews some people volunteered that they had returned a survey.

4 We thank the reviewer who added this insight.

5 We followed Baron and Kenny (1986) to test for mediation. Results were as follows: telecommuting—e-mail (standardized beta = −0.130, p < 0.10); telecommuting—procedural justice (standardized beta = 0.0056; p < 0.05); telecommuting—e-mail—procedural justice (standardized beta = −0.0068; p = 0.05) (Model $R^2 = 0.104$; Model $F = 1.953 + ; df = 8, 134$). Interestingly enough, it appears that telecommuting negatively affects e-mail use, albeit modestly. However, the size of the beta decreases substantially when we regress procedural justice on both telecommuting and e-mail, indicating mediation.

6 To measure employees’ satisfaction with their supervisor, we used a five-point, Likert-type, multi-item scale. We drew two items from Hackman and Oldman’s (1980) Job Diagnostic Survey and seven items, which factored and related to satisfaction with their supervisor, from Wayne’s research on Leader Member Exchange (Wayne and Ferris 1990. Wayne and Green 1993, Liden et al. 1993) (alpha = .92).

7 We thank the reviewer who raised this possibility.

References


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