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Employee reactions to electronic performance monitoring: A consequence of organizational culture

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Abstract

Research recognizes that reactions to monitoring may be moderated by several factors, but ignores the role of organizational culture. This paper argues that bureaucratic cultures will respond more favorably to monitoring than supportive cultures. Involving employees in designing the system, monitoring groups, and restricting monitoring to performance-related activities may improve attitudes toward monitoring in supportive cultures. © 2001 Elsevier Science Inc. All rights reserved.

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1. Introduction

Organizations are naturally interested in monitoring their employees' performance. Employee performance monitoring permits organizations to assess whether or not the organization is getting what it is paying for. Monitoring also permits supervisors to obtain valuable performance information that can be used for employee development. Thus, organizations have monitored their employees for centuries (US Congress, 1987). However, recent advances in electronic technology are transforming the nature of employee perform-

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ance monitoring. In contrast to supervisory monitoring, electronic performance monitoring (EPM) is constant, pervasive, and unblinking.

Not surprisingly, an increasing number of organizations are turning to EPM in an effort to increase the effectiveness of their monitoring efforts. In 1987, the Office of Technology Assessment (OTA) estimated that 6 million US workers were electronically monitored (US Congress, 1987). Recent estimates indicate that at least 40 million US workers may be subject to electronic monitoring (Botan, 1996) and that as many as 75% of large companies electronically monitor their employees (American Management Association, 2000).

It is also not surprising that the extensive and growing use of EPM engenders considerable debate among business groups, employee advocate groups, and politicians (Greenlaw & Prunceanu, 1997; Hays, 1999; Kovach, Conner, Livneh, Scallan, & Schwartz, 2000). For example, proponents of EPM argue that it is an indispensable tool that benefits both organizations and their employees. There are a number of reasons why organizations view electronic monitoring as an economic necessity. For example, EPM can help increase productivity, improve quality and service, and reduce costs. Organizations may also monitor employees for reasons less directly related to job performance. For example, monitoring may help businesses avoid legal liability, negative publicity, and security breaches (Stanton & Weiss, 2000; Williams, 2000). Proponents of monitoring also argue that the practice may benefit employees by producing more objective performance appraisals and improved feedback (Angel, 1989; Henriques, 1986a, 1986b).

Critics counter that EPM invades consumer and employee privacy, decreases job satisfaction, increases stress, and engenders work environments characterized by diminished trust and negative work relationships (Greengard, 1996; Lewis, 1999; Piturro, 1989). They frequently refer to monitoring systems with descriptors like “Big Brother,” “Orwellian,” “electronic sweatshops,” and “electronic whips” (Bylinksy, 1991; Garson, 1988; Lewis, 1999; Nussbaum & duRivage, 1986; Schulhof, 1998). As a result of this intense debate over the costs and benefits of EPM, a number of US senators and members of Congress have proposed legislation intended to restrict the amount of monitoring organizations can conduct (see DeTienne & Alder, 1995; Mishra & Crampton, 1998 for reviews).

The wide divergence of opinion concerning EPM suggests that employees may not react the same way to monitoring across all settings. Instead, a number of factors may influence workers’ reactions to EPM. Unfortunately, there is little theoretical explanation as to why individuals may respond differently in some cases than in others. I argue that the literature on organizational culture may provide a key piece to this puzzle. Specifically, I argue that employee reactions to EPM will vary as a function of organizational culture and that certain types of organizational cultures will be more receptive to EPM than will other types. I further suggest that EPM will be more successful when organizations design, implement, and utilize EPM systems in a manner consistent with the organization’s culture. Below, I first review the literature on EPM. Subsequently, I discuss research on organizational culture. Then, I examine the link between EPM and culture. Finally, I discuss implications of this integration for practice and research.

2. Electronic monitoring

Although EPM has generated considerable controversy and attention among the public, little empirical or theoretical work has been done on the impact of EPM (Aiello & Svec, 1993). The work that has been done reveals mixed results. A number of case studies and empirical investigations indicate that EPM may prove detrimental to both organizations and their employees. For example, research by Grant, Higgins, and Irving (1988) demonstrated that EPM may hinder organizational performance by inducing workers to sacrifice product quality. Anecdotal accounts similarly suggest that monitored workers may focus exclusively on quantitative aspects of the job to the detriment of customer service (Lewis, 1999).

Research also indicates that EPM may be associated with worker stress and health problems (Aiello & Kolb, 1995; Aiello & Shao, 1993; Henderson, Mahar, Saliba, Deane, & Napier, 1998; Schleifer, Galinsky, & Pan, 1995; Smith, Carayon, Sanders, & Legrande, 1992). Henderson et al. (1998) found an arousing effect of monitoring on participants' blood pressure. Schleifer et al. (1995) found that electronic monitoring produced greater workload dissatisfaction, irritation, tension, and perceived time pressure among a group of employees selected for the study because their speed was substandard. Smith et al. (1992) compared the attitudes of monitored workers to those of unmonitored workers and obtained three important results. First, 81% of the monitored employees reported being depressed, as opposed to 69% of those not monitored. Second, of those monitored, 72% felt extreme anxiety, compared to only 57% of those who were not monitored. Finally, 57% of employees (a ratio double the rate of unmonitored workers who experienced sore wrists) who were monitored by the number of keystrokes they entered complained of sore wrists.

In contrast, some research suggests that EPM may benefit both organizations and their employees. A number of case examples indicate that monitoring may be used to improve service and quality and cut costs. GE's customer satisfaction rate increased to 96% after it implemented a telephone surveillance system for customer service calls (Bylinsky, 1991). AT&T, MCI, and Pacific Bell have obtained similar customer service improvements through the use of monitoring (Communications Daily, 1993; Gerdelman, 1993).

In addition to case studies and anecdotal accounts, empirical research indicates that organizations may obtain positive results from EPM (Aiello, 1993; Griffith, 1993). Aiello and Kolb (1995) found that highly skilled monitored participants keyed more entries than highly skilled nonmonitored participants. However, the opposite pattern was detected among low-skilled participants. Nebeker and Tatum (1993) hired database operators to perform a data management task in a controlled experiment. These operators were separated into six groups that worked under different levels of performance standards. Four of the six groups were assigned performance standards and performance against the standard was monitored for these groups. The results of this experiment indicate that those who were aware that their performance was being recorded and were given performance feedback were more productive than workers who were either not monitored or were unaware that they were being monitored. Significantly, this increased productivity did not come at the expense of increased stress, reduced satisfaction, or lower quality.

Research further indicates that EPM may increase employee satisfaction and morale by resulting in more objective performance appraisals and improved performance feedback (Angel, 1989; Henriques, 1986a, 1986b). Fenner, Lerch, and Kulik (1993) conducted a laboratory experiment which revealed that computerized monitoring increases evaluation accuracy by permitting supervisors to devise information search strategies best suited to the appraisal and by reducing the occurrence of memory-related biases. Eisenman (1986) demonstrated that both monitored employees and their supervisors believe that EPM systems provide more objective data about performance than traditional forms of monitoring. Consistent with this research, Westin (1986) interviewed employees who said they were satisfied with their employer's monitoring system because they, "wouldn't want to be dependent only on the subjective judgments of a supervisor, who might be someone you didn't get along well with" (p. 76).

More recent research recognizes that monitoring's impact may depend on several moderating factors including the organization's approach to monitoring. This research notes that the technology itself is neutral. However, monitoring technology can be applied in a number of ways. Thus, how the system is designed, implemented, and used affects employee reactions and the system's effectiveness (Alder & Tompkins, 1997; Ambrose & Alder, 2000; Chalykoff & Kochan, 1989; Kallman, 1993; Stanton, 2000a).

Some research suggests that a key to ensuring positive employee responses is to implement and utilize EPM fairly (Alge, in press; Ambrose & Alder, 2000; Kidwell & Bennett, 1994; Stanton, 2000b). Kidwell and Bennett (1994) demonstrated that perceived fairness was significantly related to satisfaction with monitoring, which in turn was associated with job satisfaction. Results of their study also indicate that supervisory consideration and expertise positively influenced fairness judgments. Ambrose and Alder (2000) applied organizational justice theory and research to argue that fairness perceptions may largely determine employee reactions to monitoring. They further propose a comprehensive model of 12 monitoring system dimensions that influence employee perceptions of fairness in monitoring.

Thus, a growing stream of research suggests that perceived fairness is a critical determinant of employee's behavioral and attitudinal reactions to monitoring. This research also identifies several factors that influence the perceived fairness of monitoring. However, this research has looked almost exclusively at the organization's approach to monitoring. Although the organization's approach is clearly important, other factors may affect fairness perceptions. Indeed, Stanton's (2000a) conceptual review suggests that, in addition to characteristics of the monitoring system, organizational contextual variables may exert an important impact on monitored individuals' attitudinal and behavioral reactions to monitoring including their perceptions of fairness.

I suggest that one such contextual factor that has been ignored in monitoring research to date is the monitoring organization's culture. Although no research has examined the impact of organizational culture on perceptions of fairness, indirect support for this link is provided by cross-cultural justice research (Greenberg, 1982). This research indicates that fairness norms and preferences vary as a function of national culture. By extension, it is reasonable to assume that organizational culture may influence what employees deem to be fair and acceptable. Thus, organizational culture may similarly impact the perceived fairness of EPM.

3. Organizational culture

Organizational culture has emerged as one of the dominant themes in management studies during the last decade (Sheridan, 1992). Although, the concept of organizational culture is difficult to define because of its vast scope (Petrock, 1990), organizational culture may be thought of as a socially constructed, cognitive reality that is rooted in deeply held perceptions, values, beliefs, or expectations that are shared by, and are unique to, a particular organization (Hofstede, Neuijen, Ohayv, & Sanders, 1990; Meyerson & Martin, 1987; Swartz & Jordan, 1980).

Researchers also seem to agree that the shared values and beliefs underlying an organization's culture result in behavioral norms or expectations that exert significant influence on employee behaviors and attitudes (Cooke & Rousseau, 1988; Wilkins & Ouchi, 1983). Consistent with this logic, conceptual and empirical work connects organizational culture with an assortment of organizationally relevant variables including retention (Kerr & Slocum, 1987; Sheridan, 1992), commitment and creativity (Hood & Koberg, 1989; Koberg & Chusmir, 1987), and performance (Barney, 1986; Deal & Kennedy, 1982; Kilmann, 1984).

Sheridan (1992) investigated the retention rates of college graduates hired in public accounting firms. Results indicated that variation in cultural values among the firms had a significant effect on voluntary turnover and that these cultural effects were stronger than the combined effects of labor market conditions and demographic characteristics. Hood and Koberg (1989) found that both innovative and supportive cultures were positively associated with satisfaction and involvement and negatively associated with propensity to leave the organization. Denison (1990) indicates that organizations with cultures featuring well-dispersed participatory decision making practices had higher returns on investment and sales than those not as well dispersed. Akin and Hopelain (1986) demonstrated connections between culture and performance that strengthen over time.

Thus, research indicates that culture leads to a number of organizationally valued outcomes and may be a critical factor in firm success. Indeed, Barney (1986) argues that corporate culture may be a source of sustainable competitive advantage. At the same time, however, culture may be counterproductive and detrimental to company performance (Kets de Vries & Miller, 1986). Further, although culture's constraining influence on employee behavior has received the majority of attention (Cooke & Rousseau, 1988), culture similarly constrains management behavior restricting the set of viable practices organizations may implement (Schwartz & Davis, 1981). Enz (1988) indicates that organizational value systems provide justifications both for appropriate member behavior and for the activities and functions of the organization. At the same time, however, management must function in a manner consistent with these systems. Culture has pervasive effects on a firm because a firm's culture not only defines who its relevant employees, customers, suppliers, and competitors are, but it also defines how a firm will interact with these key actors (Barney, 1986, p. 657). Culture governs how a company allocates resources, the systems it uses, the results it recognizes and rewards, and the sanctions that managers can use (Petrock, 1990).

This logic leads to the widely accepted belief that effectiveness depends on successfully matching an organization's culture with the systems, strategies, and practices it utilizes

(Schwartz & Davis, 1981; Smircich, 1983). A lack of fit between culture and changes in other aspects of the organization may result in resistance and the failure of the new measure (Schwartz & Davis, 1981). In essence, culture not only influences general attitudes and behaviors but also affects, and is affected by, attitudes toward specific events, practices, and strategies (Jones & James, 1979). Thus, if management institutes a new strategy or practice, such as EPM, that runs counter to the organization's prevailing culture, negative attitudes and resistance are sure to follow. On the other hand, employees will likely embrace new practices and procedures that are consistent with the organization's culture.

Based on the logic that culture may be a powerful positive or negative force, as well as act as a constraint on both employees and managers, considerable debate has emerged concerning the ability to manage a firm's culture to improve performance (Smircich, 1983; Tichy, 1983). According to many, culture offers the key to managerial control over worker commitment and organizational effectiveness (e.g., Deal & Kennedy, 1982; Peters & Waterman, 1982). The task of top management, according to this perspective, is to mold, shape, and change internal culture in ways consistent with managerial purposes and organizational objectives (Smircich, 1983). Thus, Peters and Waterman (1982) describe the importance of managing culture in excellently managed companies. Akin and Hopelain (1986) identify the qualities that constitute a strong culture of productivity and offer suggestions for managers who wish to enhance the culture of productivity in their organizations.

However, some question whether organizational culture is manageable for a variety of reasons (Smircich, 1983). Culture is rooted in deeply entrenched beliefs and values in which individuals hold a substantial emotional investment. Thus, workers may view cultural change as personally threatening and resist such change. Along these lines, Petrock (1990) argues that organizational culture can never be imposed because people cannot be forced to change their values simply because someone perceives it to be in their best interest to do so. Others argue that the subconscious, taken for granted, nature of corporate culture naturally implies persistence, inertia, and thus resistance to change (Meyerson & Martin, 1987).

Although it is beyond the scope of the current paper to resolve this debate, it appears that we may safely conclude that if cultural change can be managed, it is a difficult process that requires significant time. Thus, it may frequently be a better approach to fit the organization's practices and procedures to its culture rather than the reverse. Schwartz and Davis (1981) suggest that managers should consider the cultural risk of proposed new strategies. They contend that the organizational change implied by new business practices should be compared to the cultural orientation of the organization in order to determine the degree of potential resistance. If potential resistance is high and the new procedure is not critical to organizational performance, then management should consider alternative measures.

In summary, research indicates that corporate culture is a powerful determinant of employee attitudes and behaviors in general, as well as their reactions and attitudes toward specific events and practices. Thus, fit between strategies, practices, and culture is critical to success. Employees are likely to respond positively to new organizational procedures and strategies that are consistent with the organization's culture. On the other hand, strategies and practices that run counter to the organization's prevailing culture are likely to meet resistance and result in negative employee attitudes and counterproductive behavior. Further, although

disagreement exists over whether culture can be consciously controlled and changed, it seems clear that doing so is difficult and requires a significant amount of time. Thus, it may frequently be preferable to obtain fit between culture and organizational practices by altering the latter rather than the former.

These conclusions have clear implications for EPM. Specifically, these arguments indicate that employees in some organizational cultures may respond more favorably to monitoring than those in other organizational cultures and that certain approaches to monitoring may be more successful in some organizations than in others. Thus, consistent with Schwartz and Davis' (1981) recommendation, organizations contemplating the implementation of EPM should compare the practice to their cultural orientation in order to determine the degree of potential resistance to the monitoring. When expected resistance is high, the organization should either refrain from monitoring their workers or modify their approach to monitoring in a way that makes it more culturally friendly. The remainder of this paper identifies different cultures that may be more or less receptive to EPM and subsequently assesses culture's impact on the relative effectiveness of four monitoring system dimensions. First, I identify relevant types of organizational culture.

4. Types of organizational cultures

Because the concept of organizational culture is vague and intangible, there are innumerable ways to describe the content of culture (Cooke & Rousseau, 1988). Thus, few writers have attempted to classify or label types of culture (Hood & Koberg, 1989). Hofstede et al. (1990) empirically derived a six-dimensional model of organizational cultures. However, these dimensions may appear in any number of combinations. Thus, Hofstede et al.'s framework does not provide a parsimonious classification of organizational culture types. Cooke and Rousseau (1988) similarly identify a 12-dimensional model of organizational culture but do not derive a typology of cultures from the model.

Deal and Kennedy (1982) identified four cultural types based on the amount and frequency of feedback and risk-taking in the organization: (1) tough-guy macho, (2) work hard–play hard, (3) bet your company, and (4) process. However, these cultural types are not well defined and no instrument for measuring them is provided. Petrock (1990) similarly proposes a typology of four cultural types: (1) clan culture, (2) adhocracy culture, (3) hierarchy culture, and (4) market culture. However, it is unclear how these dimensions were derived and Petrock, like Deal and Kennedy, provides no instrument for measuring the types.

Wallach (1983) proposes a useful typology that overcomes many of the weaknesses associated with other models. She identified and clearly defined three separate, measurable organizational cultures: bureaucratic, innovative, and supportive. *Bureaucratic cultures* are characterized by clear lines of authority and responsibility and by highly organized, compartmentalized, and systematic work. Bureaucratic organizations are hierarchical, structured, regulated, and procedural. *Innovative cultures* are results-oriented environments where challenge, risk-taking, and creativity are valued. Innovative organizations provide workers with challenge and stimulation. These environments, however, also tend to be associated with

high levels of worker stress and burnout. In *supportive cultures*, workers are friendly, fair, and helpful to each other and to the organization. Supportive cultures promote “family values” such as harmony, openness, friendship, collaboration, and trust. The company is supportive of its employees expressing that support through attitudes that establish the firm as trusting, equitable, safe, social, encouraging, relationships oriented, collaborative, and as a giver of personal freedom. It attempts to base its style on humanistic principles.

Subsequent empirical research has demonstrated the efficacy of Wallach’s (1983) typology. For example, Koberg and Chusmir (1987) found that Wallach’s cultural types interacted with managers’ needs for power, affiliation, and achievement to predict job involvement, satisfaction, and propensity to leave. Hood and Koberg (1989) found that both innovative and supportive cultures were positively associated with satisfaction and involvement and negatively associated propensity to leave the organization. Bureaucratic culture, on the other hand, had a nonsignificant negative association with satisfaction and involvement. Thus, it appears as though Wallach’s framework is a useful instrument for assessing culture’s impact on employee attitudes and behaviors. Thus, this typology may also be useful for evaluating employees’ reactions to EPM.

5. Culture and EPM

The previous sections suggest that organizational culture may partially determine what employees consider fair and appropriate. Consistent with this logic, Fig. 1 indicates that culture will have a direct influence on the perceived fairness of EPM. Fig. 1 also indicates that culture will moderate the relationship between four monitoring system dimensions (participation, object, amount, and fairness) and fairness perceptions. This section uses Wallach’s

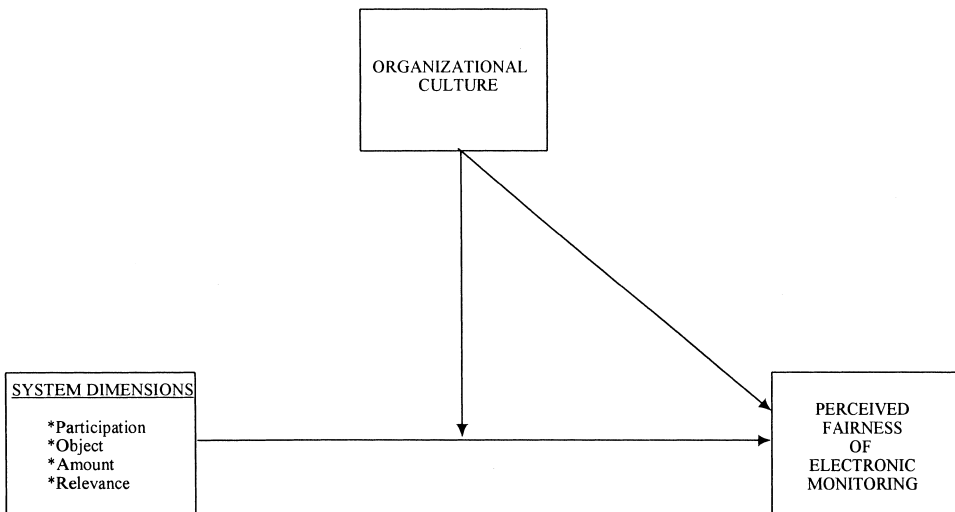


Fig. 1. Culture’s impact on the perceived fairness of monitoring.

(1983) typology to identify cultures that may view monitoring as fair and those that may consider it unfair.

Supportive organizational cultures are based on frequent positive interaction, mutual support, and common trust among workers and between workers and their supervisors. In contrast, EPM may diminish each of these elements critical to a supportive culture and, as a result, produce perceptions of injustice. Critics contend that a common problem of monitoring is that it creates work environments characterized by diminished trust and negative work relationships (Greengard, 1996; Lewis, 1999). Research further indicates that EPM may reduce communication between supervisors and employees as well as change the nature of that communication. For example, Amick and Smith (1992) report that monitoring can be used in a way that creates less supportive relationships marked by negative, coercive, and impersonal interaction. Nine to Five (1990) found that one of the major complaints of monitored employees is that monitoring sets up an atmosphere of suspicion and results in heavy-handed and demeaning discipline.

In addition to altering the relationship between workers and their supervisors, EPM may reduce interaction and support between coworkers. Irving, Higgins, and Safayeni (1986) found that monitored workers experienced decreased satisfaction and a decline in the quality of relationships with peers, supervisors, and senior management. Aiello (1993) similarly found that one reason monitored video display terminal workers experienced greater stress and worsened health was because they were more lonely at work. Because of the greater availability of information directly through their terminal, contact with coworkers and supervisors was reduced. This, in turn, resulted in lower levels of perceived social support and higher levels of stress and stress-related illnesses. Thus, EPM may disrupt the positive interaction based on mutual support and trust characteristic of supportive organizations and be perceived as unfair.

In contrast, bureaucratic cultures de-emphasize interaction, mutual support, and common trust. Instead, these cultures emphasize procedure and compartmentalized systematic work. These cultural elements may be reinforced by EPM. Electronic monitors may be used to prompt workers to work faster, automatically present their next piece of work, and warn them when they are falling behind standards (Nussbaum & duRivage, 1986). In this way, monitoring serves to proceduralize, compartmentalize, and systematize the flow of work in an organization. Kelman (1988) argues that, “Computers are turning the office of the future into the factory of the past. Bosses are using computers the same way bosses have used machines since the Industrial Revolution — to routinize and subdivide jobs, robbing them of variety, challenge and meaning” (Kelman, 1988). Although critics of monitoring cite this facet of monitoring as a problem, it is quite consistent with bureaucratic cultures and may not pose a problem for workers in this environment. Indeed, workers in a bureaucratic organizations may embrace these qualities of a monitoring system. Thus, EPM is consistent with a bureaucratic culture and may be perceived as fair by employees of these organizations.

Finally, attitudes toward EPM in innovative cultures may be expected to fall in between those in bureaucratic and supportive cultures. Workers in innovative cultures value risk-taking, variety, and challenge. EPM, on the other hand, naturally reduces variety and challenge. Additionally, although innovativeness requires creativity and intense cognitive effort, electronic monitors are designed to measure and assess objective,

observable behaviors and work outcomes and cannot evaluate cognitive dimensions of the job. Thus, workers are given mixed signals and are placed in the anxiety producing dilemma of having to choose between performing their duties in a manner dictated by monitoring or in a manner consistent with the organization's innovative culture. This dilemma may clearly reduce fairness perceptions. However, innovative cultures are also results-oriented and electronic monitors are designed to focus predominately on end-results. Indeed, a frequent criticism of EPM is that monitored workers may sacrifice quality because monitoring produces a natural preoccupation with quantitative results (Grant & Higgins, 1989; Lewis, 1999). In sum, several characteristics of EPM run counter to an innovative culture while other characteristics are consistent with this culture. Thus, I offer Proposition 1:

Proposition 1: Controlling for monitoring system dimensions, perceptions of the fairness of electronic monitoring will be highest in bureaucratic organizational cultures and lowest in supportive organizational cultures. Electronic monitoring will be associated with medium levels of fairness perceptions in innovative organizational cultures.

6. Monitoring system dimensions and organizational culture

Proposition 1 indicates that monitoring is likely to be perceived as fairer in bureaucratic than in innovative or supportive cultures. Recently, however, researchers have identified a number of monitoring system characteristics that, depending on the organization's approach, may increase or diminish fairness perceptions associated with monitoring (Ambrose & Alder, 2000). This section indicates that organizational culture may moderate the relationship between four of these system characteristics and fairness: employee participation (whether employees are allowed input into the design of the system); object (whether individuals or groups are monitored); amount (how frequently employees are monitored and for how long); and relevance (whether the system monitors activities directly related to task performance).

6.1. Employee participation

Consistent with research on organizational justice and participative decision making, a number of writers have suggested that monitoring systems will be perceived as more fair if the monitored employees are involved in the design and implementation of the system (Alge, in press; Ambrose & Alder, 2000; DeTienne & Abbott, 1993). Susser (1988) argues that much of the hostility toward monitoring results because workers have commonly been excluded from the design, testing, utilization, and adjustment of monitoring techniques. Aiello and Kolb (1995) similarly argue that if employees are involved early on in the introduction of a monitoring system and feel that their input has been incorporated in the system adopted, they may feel greater ownership of their work and experience greater

motivation and less stress. Consistent with these arguments, results of Alge's (in press) laboratory study revealed that affording those monitored input into the process (participation) reduced invasion of privacy and enhanced judgments of procedural fairness. Ottensmeyer and Heroux (1991) similarly demonstrated that when workers had the opportunity to participate in the design and implementation of computer monitoring systems, they were more likely to focus on the positive aspects of its use.

Although these researchers all express the sentiment that soliciting employee input in the design and implementation of the monitoring system will uniformly increase perceptions of fairness, these relationship may be moderated by organizational culture. Organizational cultures may be characterized by well-dispersed participatory decision making or by predominately top–down decision making (Denison, 1990). Authoritarian cultures emphasize tradition, hierarchy, authority, and top–down communication. Participatory cultures, on the other hand, emphasize teamwork and two-way communication (Communication World, 1991). These characteristics are clearly consistent with Wallach's (1983) conceptualization of supportive cultures. Therefore, soliciting employee participation in the design and implementation of monitoring systems may be expected to increase employees' perceptions of fairness and I advance Proposition 2:

Proposition 2: In supportive cultures, electronic monitoring will be associated with higher perceptions of fairness when employees participate in the design and implementation of the system than when they are designed without employee input.

On the other hand, hierarchy, authority, and top–down communication characteristic of authoritarian cultures are more consistent with Wallach's (1983) description of bureaucratic cultures. Thus, employee participation in these cultures may be quite rare. Although research generally indicates that employee commitment and satisfaction are greater in participative than in authoritarian cultures (Matejka & Liebowitz, 1989), soliciting employee input in one situation does not create a participative culture. In fact, permitting employee participation in one area, such as EPM, while denying it elsewhere may breed suspicion and perceptions of manipulation. Nutt's (1996) study of approaches to organizational change in participative and control cultures provides support for this logic. This investigation indicated that an accommodation approach to organizational change was viewed as more successful in a participative culture. In contrast, bargaining and incentive approaches were viewed as more successful in control type cultures.

In addition to being counter-cultural, soliciting employees' opinions concerning the design of an EPM system will call their attention to the system and, thus, has the potential to increase its saliency and perceived pervasiveness. Thus, in bureaucratic cultures, involving employees in the design and implementation of the monitoring system decrease perceptions of fairness and Proposition 3 is offered:

Proposition 3: In bureaucratic cultures, electronic monitoring will be associated with lower perceptions of fairness when employees participate in the design and implementation of the system than when they are designed without employee input.

6.2. Object of monitoring

Monitoring research suggests that reactions to monitoring are influenced by whether the system monitors group or individual performance (Aiello & Kolb, 1995; Brewer, 1995). Grant and Higgins (1989) hypothesized that the more directly a system attributes performance to a specific individual, the more pervasive it would seem. Carayon (1993) suggests that a system that measures group performance may be less stressful than one that measures individual performance, which may put undue pressure on the individual to work harder and faster. These contentions have been supported by empirical investigation. Results of Aiello and Kolb's (1995) laboratory experiment revealed that group level monitoring provided some protection against stress as participants who were monitored at the group level obtained stress scores between those who were individually monitored and those who were not monitored.

In sum, research generally suggests that employees will respond to group-level monitoring more favorably than to individual-level monitoring. However, this relationship may be moderated by a number of factors. For example, Ambrose and Alder (2000) theorize that the level of task interdependence may influence preferences for individual or group-level monitoring. Culture may similarly impact these preferences.

An organization's culture is reflected in the criteria it uses to assess effectiveness and is reinforced by its reward system (Kerr & Slocum, 1987; Quinn & Rohrbaugh, 1983). For example, some cultures emphasize total organizational performance or group performance while other cultures reward individual performance. Bureaucratic cultures diminish interpersonal interaction and cohesive teams and are, thus, likely to value individual performance and favor individual reward systems. Group-level monitoring is ill-equipped to assess individual performance and to link performance with individual pay. As a result, group-level monitoring is likely to send workers in bureaucratic cultures mixed signals and erode fairness perceptions. Additionally, research on group performance indicates that when group performance is measured, individuals may engage in social loafing (Comer, 1995). This mismatch between culture and monitoring may cause high performers to feel unfairly treated as they are forced to carry low performers.

In contrast, supportive organizational cultures value cohesion and teamwork. Individual monitoring in these organizations may similarly represent a mismatch between culture and monitoring as individuals are likely to feel uncomfortable when individual contributions, rather than group contributions, are the focus of monitoring. Although these relationships have not been tested in the empirical literature, indirect support is seen in the prevalent monitoring practices in different countries. In the United States, an individualistic country, individual monitoring is more prevalent than group monitoring. In contrast, most firms in collectivistic countries, such as Japan, Norway, and Sweden, monitor primarily group performance (Aiello, 1993). Thus, I offer Propositions 4 and 5:

Proposition 4: In supportive organizational cultures, higher perceptions of fairness will result when group performance is monitored than when individual performance is monitored.

Proposition 5: In bureaucratic organizational cultures, higher perceptions of fairness will result when individual performance is monitored than when group performance is monitored.

6.3. Amount of monitoring

EPM systems may be designed to monitor worker performance continuously, frequently, or occasionally. Thus, another decision organizations must make is how much they should monitor their workers. Popular wisdom indicates that too much monitoring may be pervasive, stressful, and unfair (Carayon, 1993; Grant & Higgins, 1989). Consistent with this logic, the proposed monitoring legislation that has generated the most support (The Privacy for Consumers and Worker's Act) seeks not to eliminate monitoring, but to restrict the amount of monitoring organizations can conduct. However, monitoring research indicates that the relationship between the amount of monitoring and employee reactions may not be that straightforward. For example, contrary to their hypothesis, Grant and Higgins' (1989) investigation revealed that increased frequency of monitoring led to increased acceptance because employees believed this provided more complete and accurate data. Results of Hawk's (1994) study similarly indicated that, contrary to his hypothesis, the more frequently supervisors received monitoring output, the less stress employees experienced.

The organization's purpose for monitoring workers may be one factor that influences individual preferences for high or low amounts of monitoring. EPM can be used primarily for developmental or for administrative purposes. When monitoring is used primarily for administrative purposes, its objective is to help management enforce production standards, assess worker performance against those standards, and dispense rewards and punishment accordingly (Aiello & Shao, 1992). These concerns are clearly more consistent with bureaucratic cultures. Research indicates that employees believe that greater amounts of monitoring produce more complete, accurate data and, therefore, fairer performance evaluations. Thus, employees in bureaucratic cultures may perceive high amounts of monitoring to be fairer than low amounts.

In contrast, when employee development is the primary concern, monitoring is used to help management work with employees to improve their performance, provide training for those who need it, and praise those who perform well. Clearly, these concerns are more consistent with a supportive organizational culture. Consequently, employees in these organizations may be less concerned with whether the monitoring system leads to fair evaluations by comprehensively assessing all aspects of performance. Instead, workers desire only that monitoring sample a sufficient amount of performance to pinpoint areas where they need additional training and development. Used in this manner, EPM may reinforce the spirit of support and development valued by the organization's culture and increase fairness perceptions.

On the other hand, the potential negative consequences associated with too much monitoring may be particularly salient to supportive organizations. Strickland (1958) indicates that extensive surveillance and monitoring of subordinate performance may erode

trust. Carayon (1993) argues that excessive monitoring reduces employee interaction because employees feel compelled to remain at their monitored work stations. Inasmuch as positive interaction and trust are critical to supportive organizations but de-emphasized in bureaucratic cultures, the amount of monitoring may be positively associated with fairness perceptions in bureaucratic cultures whereas extensive monitoring may diminish fairness judgments in supportive cultures. This rationale suggests Propositions 6 and 7:

Proposition 6: In supportive organizational cultures, the amount of monitoring the organization conducts will have a curvilinear relationship with fairness perceptions. Fairness perceptions will be highest when the organization strikes a balance between too little and too much monitoring.

Proposition 7: In bureaucratic organizational cultures, the amount of monitoring the organization conducts will have a positive relationship with fairness perceptions.

6.4. Relevance

Whether monitoring collects only performance-related information or includes activities less directly related to task performance will also likely influence employee reactions to EPM. For example, the job relevance of what is being monitored has been posited to impact both procedural justice (Ambrose & Alder, 2000) and privacy (Stone & Stone, 1990; Stone & Stone-Romero, 1998). Alge (in press) tested these propositions in a laboratory simulation. Participants in Alge's study were randomly assigned to either a high relevance condition or a mixed relevance condition. Participants in the high relevance condition were informed that monitoring collected only performance relevant data and that the monitoring system was deactivated during their break periods. In contrast, participants in the mixed relevance condition were monitored during their work break and were also told that if they used the computer for personal use, such as visiting nonmanagement-related web sites, the site supervisor would know about it. Results indicated that monitoring job-relevant activities reduced participants' perceived invasion of privacy and enhanced procedural justice.

The task relevance of monitoring will likely be a more salient concern with some forms of monitoring than with others. For example, keystroke monitoring focuses on activities that are clearly and directly related to both quantitative (entry rate) and qualitative (errors keyed) dimensions of performance. In contrast, other computer monitoring techniques facilitate monitoring of a broader range of worker-related activities, some of which may not be directly related to performance. For example, the American Management Association (2000) estimates that 54% of companies monitor their employees' Internet connections. Chief among the reasons organizations monitor Internet usage and Web site visitation are to avoid lawsuits or negative publicity caused by employee visits to illegal or illicit sites (Williams, 2000). However, it is unknown whether these behavior are related to job performance (Stanton & Weiss, 2000). More importantly, it is unlikely that employees will perceive a tight link between monitoring of these activities and task performance. Similarly, an estimated 38% of businesses monitor their employees' e-mail. Reasons organizations cite for monitoring

e-mail are to avert harassment suits arising from illicit e-mail messages, to avoid security breeches, and to provide legal protection in case copyright laws have been broken (Williams, 2000). Again, the connection between e-mail monitoring and task performance is minimal (Stanton & Weiss, 2000).

A majority of employees in all types of cultures will likely agree that it is inappropriate for workers to view pornographic material with the company's computer or to use the company's e-mail system to reveal company secrets. However, organizational culture may influence the extent to which employees believe that computer monitoring of activities not directly relevant to task performance, including e-mail and Internet monitoring, is fair and acceptable. As described above, a common concern with monitoring is that it erodes trust between employees and management (Greengard, 1996; Lewis, 1999). This concern is likely heightened when monitoring is focused on nonperformance activities. Whereas monitoring of performance-related activities may be used not only to assess performance but also to help improve that performance, e-mail and Internet monitoring is conducted for the express purpose of preventing employee improprieties. To the extent that this sends a message to employees that the organization does not trust them to behave legally, ethically, and in the organization's best interest, it may constitute a violation of prevailing norms of trust in supportive cultures and diminish fairness. I offer the following proposition:

Proposition 8: Monitoring that is not directly relevant to task performance will diminish fairness in supportive organizational cultures.

In contrast, bureaucratic cultures de-emphasize trust in favor of formalized guidelines and regulations and strict procedures for enforcing them (Wallach, 1983). As such, it is likely that employees of bureaucratic organizations will perceive e-mail and Internet monitoring as consistent with prevailing norms and consider it another component of the organization's enforcement system. Additionally, to the extent that trust between employees is lower in bureaucratic organizational cultures, employees may welcome computer monitoring of activities not directly related to task performance as a form of protection. Indeed, the need for organizations to protect their employees by utilizing monitoring technology receives considerable attention in legislative discussions of the topic (DeTienne & Alder, 1995; Greenlaw & Prundeanu, 1997). Based on these arguments, I posit the following:

Proposition 9: In bureaucratic organizational cultures, computer monitoring of activities that are less directly relevant to task performance will have an additive affect enhancing fairness above the positive impact of performance-related monitoring.

7. Implications

Extensive and growing use of EPM generates considerable debate. As a result, a growing stream of research attempts to identify the factors that may influence employee reactions to

monitoring. Research demonstrates that organizational culture exerts significant influence on employee attitudes and reactions to organizations' practices and procedures. By extension, organizational culture is likely an important factor influencing employees' behavioral and attitudinal reactions to EPM. This paper indicates that employee reactions to EPM may differ depending on the organization's culture. Specifically, monitoring may run counter to supportive organizational cultures. Thus, the implementation of EPM may be expected to produce negative attitudes and behaviors in organizations with supportive cultures.

However, electronic technology may still provide supportive organizations with a valuable monitoring tool provided these organizations consider four critical system dimensions. First, supportive organizations can reinforce the spirit of collaboration by involving employees in the design and implementation of the monitoring system. Second, supportive organizations may similarly reinforce attitudes of cooperation by monitoring groups rather than individuals. Third, supportive organizations will ensure optimum perceptions of fairness when they strike a balance between too little and too much monitoring. Monitoring in these cultures should collect enough information to assist employee development efforts without becoming excessive. Finally, employees of supportive organizational cultures will respond more favorably when monitoring is restricted to activities that are clearly linked to task performance. Inasmuch as these actions are consistent with a supportive culture, they may be expected to enhance fairness, improve employees' attitudes toward monitoring, and thereby enable organizations to reap the potentially powerful positive benefits associated with monitoring.

Although this paper focuses on the relationship between organizational culture and the perceived fairness of electronic monitoring, another intriguing potential implication concerns the necessity for monitoring in the first place. The behavioral norms and expectations underlying strong organizational cultures exert powerful influences on employee behaviors and attitudes (Cooke & Rousseau, 1988; Wilkins & Ouchi, 1983). Consequently, when an organization's culture is sufficiently strong and productive (Akin & Hopelain, 1986), that culture may effectively serve a self-monitoring role and render electronic monitoring nugatory. In such instances, it may be preferable for management to refrain from electronically monitoring employees and thus altogether avoid the risk of negative attitudinal and behavioral reactions to electronic monitoring.

7.1. Implications for research

Culture has received a lot of attention in the literature. However, the majority of this research has focused on defining culture or on describing differences in the content of culture across organizations (Cooke & Rousseau, 1988). Relatively little work, on the other hand, has been dedicated to assessing the effects of culture on employee behaviors and attitudes (Sheridan, 1992). Thus, organizational culture research has yet to realize its full potential. It is time to dedicate greater attention to theoretical and empirical examinations of the effects of culture on employees' general attitudes and behaviors and their reactions to specific strategies, practices, and events. This paper is an attempt to stimulate research in this direction.

Organizational culture is but one of several potential moderators of the relationship between monitoring system dimensions and perceived fairness. Future research should consider additional moderators of this relationship. For example, research indicates that national culture impacts work attitudes and values (Hofstede, 1980). Thus, monitoring research should investigate the influence of national culture on attitudes toward monitoring. Similarly, research could investigate the impact of industry norms on reactions to monitoring. Institutional theory indicates that industry norms influence what employees consider fair and acceptable (DiMaggio & Powell, 1983). Thus, employee attitudes toward monitoring may vary as a function of industry. For example, employees may respond more positively to monitoring in industries where monitoring is the norm than in industries where only a few organizations utilize electronic technology to monitor their workers.

Although recent research recognizes that employee reactions to EPM may be influenced by the organization's approach to monitoring, this research is unnecessarily narrow. This research suggests that if organizations do certain things, such as solicit participation in the design and implementation of the EPM system, then employees will consider monitoring to be fair and positive outcomes will result. This paper argues that these actions may not always increase perceptions of the fairness of the monitoring system. Under certain conditions, they may diminish perceptions of fairness and produce negative outcomes. Organizational culture may be a critical determinant of reactions to EPM and to specific approaches to EPM. More research that systematically considers the wide array of factors that impact reactions to EPM is needed and should prove both theoretically and practically fruitful.

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