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Electronic Performance Monitoring and Organizational Citizenship Behavior: A Procedural Justice Perspective

by

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Abstract

Research has supported the notion that the way in which electronic performance monitoring (EPM) is used can have implications for perceptions of fairness (e.g., Ambrose & Alder, 1996). Moreover, separate research literature has shown that perceptions of fairness can predict subsequent organizational citizenship behavior (e.g., Skarlicki & Latham, 1996). The purpose of the current study was to examine how the way in which EPM was used influences perceptions of fairness and how, in turn, these perceptions predicted subsequent organizational citizenship behavior (OCB). Additionally, the current study also looked at how an individual's ability level interacts with the invasiveness of monitoring to influence task performance. Results revealed significant group differences in perceptions of ethicality, overall fairness, consistency, bias suppression, and privacy. Also, significant group differences were found in terms of a more generalized, subsequent measure of OCB. The implication of these findings for both the EPM, and justice literatures are discussed.

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Electronic Performance Monitoring and Organizational Citizenship Behavior: A Procedural Justice Perspective

The U.S. Congress Office of Technology Assessment (1987) estimated that by 1990, more than 10 million American workers were subjected to electronic performance monitoring (EPM)(Nine to Five, Working Women Education Fund, 1990). Between 1990 and 1992, more than $500 million was spent on surveillance software by more than 70,000 U.S. companies (Bylinsky, 1991). The total expenditure on monitoring software in America is expected to exceed $1 billion by 1996. By all indications, spending trends in electronic surveillance and monitoring in Canada are commensurate with those of the United States.

Empirical studies have provided evidence linking EPM with increased stress (Aiello & Shao, 1992; Amick & Smith, 1992; Smith, Carayon, Sanders, Lim, & LeGrande, 1992). Survey, case study and experimental data have also indicated an association between EPM and decreased job satisfaction (Grant & Higgins, 1989; Irving, Higgins & Safayeni, 1986), perceptions of invaded privacy (Anon, 1987), and increased employee turnover (Chalykoff & Kochan, 1989).

Many researchers (Kulik & Ambrose, 1993; Chalykoff & Kochan, 1989; Griffith, 1993; Kallman, 1993) note, however, that the technology itself is neutral. How the system is designed, implemented and used affects employees' reactions and the system's effectiveness. Moreover, a number of authors suggest that the key to ensuring positive employee responses is to implement and utilize electronic monitoring fairly (e.g., Kallman, 1993; Nine to Five, 1990). Most of this work, though, does not indicate which factors affect workers' responses to EPM.

Organizational justice theories may provide some insight as to the factors involved in the successful acceptance of EPM in the workplace. Within this framework, there are a number of dimensions involved in an employee's overall perception of fairness in the design and implementation of EPM systems. These dimensions can be thought of as representing

aspects of either procedural, distributive, or interactional justice (Ambrose & Alder, 1996). The combination of these may directly influence not only subsequent perceptions of fairness but, in turn, may also play vital roles in outcome variables such as employee stress, satisfaction and turnover.

Research on EPM aside, organizational citizenship behavior (OCB) has also been directly linked to perceptions of fairness within an organization (Skarlicki & Latham, 1996). OCBs are defined as work-related behaviors that are discretionary, not related to the formal organizational reward system and, in the aggregate, promote the effective functioning of the organization (Organ, 1988a). As Greenberg (1993) points out, employees will behave altruistically toward the organization in which they work when they believe those organizations have treated them fairly. In turn, such behaviors provide the organization with the adaptation and innovation necessary for long-term survival and growth. Indeed, "employees who exhibit such prosocial behavior are highly valued by their managers and by the organizations in general..." (Muchinsky, 1996, p.281).

Research to date, however, has failed to examine the link between the way EPM is implemented or utilized and OCB. The purpose of the present research is to examine this link. Specifically, how does the way in which EPM is used influence perceptions of fairness on a job and how, in turn, do these perceptions predict subsequent OCBs?

In the following sections, EPM will be discussed in terms of the kinds of employees who are typically monitored, how and why they are monitored as well as the potential outcomes of monitoring. A justice framework is presented as a possible approach in understanding the potential outcomes of EPM. OCB is then discussed as an outcome in relation to organizational justice. Last, a series of predictions are presented linking EPM, organizational justice, and OCB.

Electronic Performance Monitoring

Since the early 1970's, the introduction of video display terminal (VDT) computer technology has had a great impact on the workplace environment. As organizations grow larger and increasingly complex, the demand for regulation and control over the work process has also increased. One manifestation of this need for control and supervision over aspects of the work process can be seen with the introduction of electronic performance monitoring (EPM).

The office of Technology Assessment, U.S. Congress (1987), defines EPM as the use of computer technology to collect, store, analyze and report information about a worker's activities. Lund (1992) extended this description to differentiate between two forms of monitoring: (1) computer-based monitoring which typically involves continuous monitoring by computer hardware and measures quantitative aspects of production such as keystrokes or claims per hour, and (2) service observation which usually involves discrete observation by a supervisor focusing on qualitative measures of production such as the courtesy, tone, attitude and accuracy of information delivered by an employee over the phone.

Although it is difficult to identify exactly how many workers are electronically monitored, the U.S. Congress Office of Technology Assessment (1987) estimated that more than 6 million American Workers were subjected to EPM. By 1990, that number grew to more than 10 million workers (9 to 5, Working Women Education Fund, 1990). Postal workers, warehouse order selectors, retail clerks and manufacturing employees were not included in this estimate; as Lund (1989) points out, however, they are also subject to EPM. Due to the potential benefits in productivity that this technology can have in information and service oriented work, it is expected that over the next decade the application of EPM systems will spread rapidly, not only throughout the United States and Canada, but throughout most industrialized countries.

Between 1990 and 1992 more than $500 million was spent on surveillance software by more than 70,000 U.S. companies (Bylinsky, 1991) The total expenditure on monitoring software in America is expected to exceed $1 billion by 1996. Unfortunately, there are few Canadian statistics available; however, by all indications, spending trends in electronic surveillance and monitoring in Canada are commensurate with those of the United States.

Clerical employees and others who perform simple, repetitive tasks represent the preponderance of workers currently subjected to electronic monitoring. Trends indicate that the work performed by professional, technical and managerial employees will also be electronically monitored at some point in the near future (Garson, 1988; U.S. Congress, Office of Technology Assessment, 1987). This potential increase in worker performance monitoring can be seen as resulting from the growing economic pressures to improve the efficiency of customer service and office work.

In addition to simply accumulating performance information, EPM enables supervisors to "look in" on employees as they work - in some cases with the employee's awareness and/or approval and in other cases without it. For example, using network technology, EPM systems provide managers with access to their employees' computer terminals and telephones at any time. This allows them to determine at any moment throughout the day the pace at which employees are working, their degree of accuracy, log-in and log-off times, and even the amount of time spent on bathroom breaks (Aiello & Kolb, 1995).

Electronic monitoring is used to monitor keystroke production and error rates in word processing and data entry tasks. Customer service operators, airline reservation clerks and directory assistance operators are monitored by computers to determine how long it takes to assist customers and to measure the amount of time between calls. Freight haulers use computers to monitor driver speed and fuel consumption and tire manufacturers electronically monitor the productivity of rubber workers (Lund, 1989).

Electronic monitoring is increasingly used to establish performance standards, track employee performance, compare actual performance with predetermined standards and administer incentive pay programs based on these standards (Anon, 1987). In essence, we see the replacement of human supervision by the more ubiquitous "unblinking electronic eye" which is able to track, evaluate and feed back performance information on a continuous basis.

Some companies monitor the work of individual employees whereas others choose to review statistics that first have been aggregated to reflect the performance of a larger work group. Monitoring at the group level is typically perceived by supervisors to be less intrusive and less stressful to workers (Kulick & Ambrose, 1993). As a result of individual monitoring, several countries (e.g., Norway and Sweden) have enacted laws that limit the degree to which individual performance may be monitored. Although monitoring individuals is not prohibited in Japan, most Japanese firms prefer to focus their monitoring efforts on work teams. In the United States, however, individual monitoring is still most prevalent (9 to 5, Working Women Education Fund, 1990; U.S. Congress, Office of Technology Assessment, 1987). In fact, it has been estimated that the performance of twenty to thirty-five percent of clerical workers using VDT in the U.S. alone are subject to individual EPM (Westin, 1986). This translates into millions of American workers whose job performance is potentially associated with increased stress through individual electronic monitoring.

Historically, employers have always attempted to improve methods for measuring employee performance in the hopes of making it more efficient, particularly in the industrial workplace. Advocates of EPM assert that continuous tracking of work activity is essential to high performance and productivity in the modern office. They contend that EPM enables managers and supervisors to organize and control human, material and financial resources. Specifically, EPM provides for (a) increased control over performance variability; (b)

increased objectivity and timeliness of performance evaluation and feedback; (c) efficient management of large office operations through the electronic supervision of work; and, (d) establishment and enforcement of performance standards (Schleifer & Shell, 1992).

Advocates of EPM also argue that the increased access to "objective" data provided by computer and electronic monitoring systems will help increase supervisory accuracy in appraising employee performance (Henriques, 1986b). The accuracy of an evaluation is typically defined by performance appraisal researchers as the degree to which it reflects actual performance. Important decisions concerning pay increases, promotions, training and terminations are often based on judgments concerning how well someone is performing a job (DeNisi & Williams, 1988).

Unfortunately, the practical utility of performance evaluations has been "limited by their demonstrable susceptibility to bias which stems from a number of personal, contextual, and psychometric factors which result in the reduced accuracy of subjective appraisals" (DeNisi, Cafferty & Meglino, 1984, p.376). Electronic monitoring systems may be seen as one way to increase the accuracy of such performance appraisals by helping supervisors overcome systematic biases observed in the appraisal process. Of course, however, appraisal then becomes limited to these aspects of the job which can be electronically tracked.

Supporters of EPM further contend that there exist several benefits from the worker's perspective. Electronic monitoring, for example, provides timely feedback of work performance which enables workers to take corrective action immediately. Regular feedback may also satisfy the worker's need for self-evaluation and reduce performance uncertainty (Landy & Farr, 1983). Again, however, feedback is limited to those aspects of performance captured by electronic monitoring. Moreover, in the case of computer monitoring, the information garnered by such EPM systems typically provide only quantitative feedback.

It is clear that such advances and expenditures in EPM systems have enabled management to monitor employees at a level that was previously unattainable by even the most diligent of supervisors. As asserted by Schleifer (1992), it is increasingly apparent that the challenges presented by VDT computer technologies such as EPM go beyond the traditional micro-ergonomic concerns of illumination levels and physical workstation design. "What we see now is the use of computer technology in office settings to capture employee performance on a second-by-second, keystroke-by-keystroke basis so that work management in the form of corrective action, performance feedback, delivery of incentive pay or disciplinary measures can be exercised at any time" (Smith, 1988, p.1).

These dramatic changes in the management of office work have, in turn, focused public attention on the potential implications of electronic monitoring for such issues as workplace performance, privacy, stress and overall job satisfaction. The use of EPM has been associated with higher levels of employees stress, a greater number of negative health outcomes, decreased job satisfaction, decreased morale as well as increased employee turnover (Aiello, 1993). Although such outcomes are often closely related, it is important to treat them separately in terms of research and literature to gain a clearer understanding of the issues involved in each.

Potential Ramifications of EPM

Though the focus of the present study is on perceptions of procedural justice, including privacy, the negative affects of EPM are well documented. Following is a discussion of the kinds of potential ramifications associated with EPM. This is meant to be neither a comprehensive nor exhaustive discussion. But because all of the following factors, including perceptions of fairness, contribute to the organizational climate, it does provide a context in which to understand the importance of the present study.

Privacy

"Electronic surveillance invades workers' privacy, erodes their sense of dignity and frustrates their efforts to do high-quality work by a single-minded emphasis on speed and other purely quantitative measurements." (Lund, 1992, p.202). Privacy as a concept has multifaceted meanings. Here, it is adequate to define privacy in terms of information control, a perspective dominant in the works of several organizational researchers (e.g., Stone & Stone, 1990; Westin, 1986). "Individuals have privacy when they are able to manage or control information about them and the subsequent impressions that others form about them" (Stone & Stone, 1990, p. 349).

Schein (1977) argues that the issue of privacy emerges because of a fundamental tension between organizational needs and individual rights. Organizations face increasing pressure to gather information to operate the organization effectively and individuals have a moral expectation or perceived right to decide what information about themselves should be collected and in what manner. Questions regarding privacy include: Who has access to the information acquired within the monitoring system? Is it seen only by the employee? Is it seen only by management? Is it made public?

Concerns have been raised by government agencies, worker representatives and the public news media that certain monitoring practices are abusive and constitute an invasion of employee privacy (Anon, 1987). In the workplace, privacy has become an issue particularly when workers do not know when or how they are being monitored. Because organizations often do not share performance data with workers, a related privacy issue is whether workers have access to their own performance records or the right to question incorrect information garnered by such methods.

Stress

"Numerous studies have shown that monitoring creates high levels of workplace stress which results in a variety of adverse health conditions. Stress-related disease, such as

heart disease, high blood pressure and digestive ailments, are increasingly reported among workers who are subjected to electronic monitoring" (Lund, 1992, p. 197). Empirical studies have provided strong evidence linking EPM with increased stress (Aiello & Shao, 1992; Amick & Smith, 1992; Smith et. al, 1992). In one survey of monitored workers, for example, 81 percent of the respondents indicated that electronic observation made their jobs more stressful (Gallatin, 1989). Another study compared the attitudes of electronically monitored insurance workers with non-monitored workers who performed comparable jobs and found that monitored workers reported feeling more stressed (Irving, Higgins & Safayeni, 1986). In a laboratory experiment, individually monitored participants exhibited the highest amount of stress while non-monitored participants showed the lowest level of stress, and participants who believed that their work was aggregated with others before it was monitored produced intermediate stress scores (Aiello & Kolb, 1995).

The increased stress associated with EPM has been attributed to changes in job design that often are introduced concurrently with electronic observation. Specifically, monitored workers have complained about increases in workload and loss of control over the manner in which they perform their jobs, which ultimately produce an imbalance between task demands and a worker's resources to adapt (e.g. Smith et. al., 1992). For example, monitoring may simply reduce opportunities for employees to socialize at work, leading some to suggest that loss of social support is at least partially responsible for the stress associated with EPM (Amick & Smith, 1992).

Overall, electronic monitoring is likely to be stressful when it is used to enforce compliance with performance standards that workers have difficulty meeting. Under such conditions, workers may experience stress through work overload, negative computer/supervisor feedback, job redesign or threat of job loss. For example, Nine to Five (1984) conducted a survey that revealed a positive correlation between computer

monitoring to maintain corporate performance standards and stress-related illnesses including headaches, anxiety, anger, and depression.

Satisfaction and Turnover

Opponents of EPM frequently claim its use increases employee stress and dissatisfaction by leading to an emphasis on quantity to the detriment of work quality. They contend it turns the modern office into an electronic "sweatshop" while making ominous allusions to an Orwellian "Big Brother" watching every move made by employees (Harz, 1985). These claims are not totally unfounded. For example, in a survey of organizations with EPM systems, the respondents reported that the quality of work was underemphasized, the stress was high and the morale was low (Irving, Higgins & Safayeni, 1986).

Chalykoff and Kochan (1989) have provided a model for examining the impact of monitoring on employee job satisfaction and turnover. For some employees the negative effects of electronic monitoring were inherent, while for others the negative impact could be mitigated by attention to the feedback process. It was concluded that while organizational-level rules and employee voice in the negotiation and application of those rules governing monitoring were important, so too were managerial efforts aimed at improving the effectiveness of monitoring practices.

EPM: A Justice Perspective

When the potential impact of EPM systems are considered, it is important to give serious consideration to those factors involved in the design, implementation and utilization of such equipment. Specifically, it is critical to understand those influences or situational variables that might mitigate or augment the impact of an EPM system on the attitudes and/or behaviors of employees.

Recently, it has been recognized in research that the impact of electronic monitoring may depend on several factors including the organization's approach to monitoring. For

example, Kallman (1993) points out that the same monitoring technology has been a success and a failure depending on the organizations in which it was applied. As well, Chalykoff and Kochan (1989) found employees responded positively to the use of computer-aided monitoring when good supervision and effective feedback practices were exercised. In fact, many researchers note that the technology itself is neutral (e.g., Kulik & Ambrose, 1993; Chalykoff & Kochan, 1989; Griffith, 1993b; Kallman, 1993). How the system is designed, implemented, and used affects employee reactions and the system's effectiveness.

A number of authors suggest that the key to ensuring positive employee responses is to implement and utilize electronic monitoring fairly (Kallman, 1993; Nine to Five, 1990). Susser (1988), for example, suggests that those who claim monitoring invades privacy are masking the real issue: the fairness with which systems are applied in the workplace. However, this work does not indicate which factors, specifically, affect such perceptions of fairness. Moreover, research that identifies elements of fairness in monitoring are largely atheoretical. For example, Kidwell and Bennett (1994a, 1994b) connect computer monitoring and fairness using a procedural justice framework. Their discussion, however, primarily notes that the rules of procedural fairness should apply to monitoring, but does not identify the specific factors that influence these procedural rules.

Organizational Justice

Distributive justice assesses the fairness of outcomes and consequences of organizational processes and decisions and the resulting response of organizational members (Greenberg, 1987a, 1990a). Distributive justice theories maintain that individuals evaluate outcomes based on some distribution rule. That is, individuals typically evaluate the fairness of outcomes in terms of the need, equity or equality of that outcome. The "need distribution rule" states that rewards should be distributed on the basis of need. The "equity distribution rule" dictates that people should receive rewards that are consistent with the contributions they make or bring to a situation. The "equality distribution rule" suggests that all

individuals should have an equal chance of receiving the outcome or reward, regardless of differentiating characteristics such as ability (Kabanoff, 1990).

In general, research on distributive justice demonstrates that individuals' perceptions of the fairness of outcomes affects their attitudes and behaviors for a variety of variables including pay (Finn & Lee, 1972; Mowday, 1983; Pritchard, Dunnette, & Jorgensen, 1972), job challenge (Oldham et al., 1982), job security and supervision (Oldham, Kulik, Ambrose, Stepina & Brand, 1986). For example, employees who feel they are not receiving adequate pay for their work may feel dissatisfied and quit their jobs.

In the 1980s, organizational justice research shifted its focus from outcomes to procedures. Research on procedural justice is heavily influenced by the work of Thibaut and Walker (1975) who demonstrated that the *process* by which outcomes are determined affects outcome satisfaction. Employee control of the process or input to the process (see "voice", Folger, 1977), for example, has been demonstrated to be positively associated with perceptions of procedural fairness and outcome satisfaction (Lind, Kurtz, Musante, Walker & Thibaut, 1980; Thibaut & Walker, 1975). The effect of voice on perceptions of procedural fairness has subsequently been established in a variety of organizational settings including performance appraisals (Greenberg, 1986) and performance goal setting (Lind, Kanfer & Early, 1990). Indeed, the positive effect of voice on perceptions of procedural fairness may be the most reliable finding in the justice literature (Lind et al., 1990).

Some researchers have further distinguished between procedural enactment and interpersonal treatment (Bies & Moag, 1986), identifying another aspect of justice: interactional justice. Interactional justice is now generally viewed as a social form of procedural justice (e.g., Greenberg, 1990a). Interactional justice has two components: procedural explanations and interpersonal sensitivity. Procedural explanations, or social accounts, provide a rationale for why something (e.g., a particular decision) has occurred.

Interpersonal sensitivity refers to the quality of treatment an individual receives and includes issues of courtesy, dignity, and respect (Greenberg, 1990a).

Research demonstrates that both procedural explanations and interpersonal sensitivity influence perceptions of fairness. Procedural explanations, for example, have been shown to exert a positive influence on the perceived fairness of temporary pay cuts, performance appraisals, layoffs, and drug testing (Greenberg, 1993). As well, interpersonal sensitivity has affected perceptions of fairness for individuals engaged in a job search (e.g., Bies & Moag, 1986), for both survivors and victims of layoffs (e.g., Brockner & Greenberg, 1990), and for employees subjected to pay cuts and smoking bans (Greenberg, 1993). In fact, measures of procedural and interactional justice have been shown to be highly correlated leaving some scholars to argue that interactional justice is an inherent aspect of procedural justice (e.g., Greenberg, 1990; Greenberg & McCarty, 1990).

Also, many researchers have elucidate the relationship between procedural and distributive justice. Brockner et al. (1994), for example, have shown that when perceptions of procedural justice were low, employees reacted more adversely to the extent that outcomes were perceived to be negative. Moreover, when employees perceived relatively high procedural justice, outcome negativity was not related to their reactions. In other words, individual reactions to can be largely conceptualized as an interaction between procedures and outcomes. This "integrated" approach to distributive and procedural justice is supported by Brockner and Wiesenfeld (1996) in their review of over 40 field and laboratory studies.

One of the conclusions that may be drawn from the organizational justice literature, then, is that perceptions of distributive, procedural, and interactional justice, whether correlated or not, each predict important individual reactions and organizational outcomes across a wide range of settings. These perceptions of justice, moreover, may be expected to influence reactions to EPM.

Justice and EPM

The use of a justice framework might provide some insight as to the factors leading to the successful acceptance of EPM in the workplace. It has been suggested that the mechanisms that influence perceptions of fairness also underlie an individual's reaction to monitoring (Ambrose & Alder, 1996). In other words, when organizations design, implement and utilize EPM technology in a way that leads to perceptions of fairness, employees will respond more favorably to the monitoring than when the system is perceived to be unfair. There are a number of dimensions involved in an employee's overall perception of fairness in the design and implementation of EPM systems. Such dimensions can be thought of as representing aspects of either procedural, distributive or interactional justice.

In a review of justice issues in EPM, Alder and Ambrose (1996) delineate the dimensions that fall under the rubric of procedural justice including: (a) balancing between continuous and infrequent monitoring, (b) allowing employees to participate in the design of the system, (c) informing employees when they are being monitored, (d) monitoring only significant, performance-relevant activities, (e) incorporating qualitative aspects of performance in evaluations, (f) utilizing monitoring in connection with realistic performance standards, (g) allowing employees to challenge performance evaluations, and (h) utilizing monitoring for developmental purposes.

Distributive justice can be viewed as playing an equally important role in employee attitudes and reactions. As Greenberg (1988) points out, for example, distributive justice is related to employee attitudes and performance. How the organization implements and utilizes electronic monitoring, for example, may indicate the distributive rules to which the organization subscribes. The dimensions associated with distributive justice include: (a) monitoring *all* employees, (b) monitoring individual performance only when consistent with organizational norms, and (c) utilizing monitoring in connection with a fair incentive system

(Ambrose & Alder, 1996). Thus, the nature and extent of EPM could influence the reward system and, ultimately, the rewards employees receive.

Aspects of interactional justice such as explanations, dignity and respect have been demonstrated to exert considerable influence on individual's reaction to organizational processes and are also expected to influence employees' reactions to EPM systems (Ambrose & Alder, 1996). Thus, to maintain perceptions of fairness, organizations need to ensure that norms of interactional justice are adhered to in the use of such systems. Specifically, interactional justice suggests two organizational activities are critical: a) the organization should explain how and why monitoring information is used and, b) the performance feedback associated with EPM systems should be supportive. According to Alder and Ambrose (1996), dimensions linked to interactional justice include: (a) providing employees with timely feedback, (b) providing constructive and supportive (respectful) feedback, and (c) providing employees with a rationale for the collection of performance data (i.e., developmental purposes).

Such dimensions, or combinations of factors, may directly influence not only subsequent perceptions of fairness but, in turn, may also play vital roles in outcome variables such as employee stress, satisfaction and turnover. These factors can be thought of in terms of recommendations for increasing the perceived fairness of monitoring systems. In other words, a system that manages to combine *all* of the above attributes of distributive, procedural and interactional justice will likely maximize employee fairness perceptions. As mentioned, perceptions of fair EPM can have direct affects on an individual's behavioral reaction to the system. For example, research demonstrates a relationship between a number of the above system attributes and employee stress, satisfaction and turnover (Aiello & Kolb, 1995). Thus, it can be argued that employee reactions to EPM systems are at least partly a function of the system's perceived fairness. For example, Lind and Tyler (1988) argue that "attitudes toward the organization as a whole, including such things as organizational

commitment, loyalty, and work group cohesiveness, are strongly affected by judgments of procedural justice. Fair procedures are a critical aspect of the quality of work life and are well-nigh essential to good employer-employee relations."(p. 179).

One reason why procedural, distributive and interactional justice is so critical is that procedures, outcomes (i.e., decisions) and feedback are an indication of the organization's overall values (Ambrose & Alder, 1996). In other words, when people are treated fairly by the organization they are likely to believe they are valued by the organization. Electronic monitoring may serve, then, as an indicator of fairness that individuals use to form evaluations of the organization. Thus, simply the way in which EPM is *used* can, ultimately, affect important organizational outcomes .

Organizational Citizenship Behavior

The classic approach to thinking about a job is in terms of the tasks comprising the job. From this foundation, human resource management research has focused on behaviors in the workplace that have direct implication for enhancing productivity of the individual and reducing costs to the organization.

Organizational research has discovered, however, that such an exclusive emphasis on direct linkages may fail to take into account the informal and discretionary individual behaviors that can benefit an organization (Katz, 1964). In terms of organizational behavior research, we know that some employees contribute to the welfare or effectiveness of their organizations by going beyond the duties formally prescribed in their jobs. These non-traditional behaviors are on-the-job behaviors that are not usually captured by traditional job descriptions and thus are more likely under personal control (Organ, 1988a). That is, some employees give extra, discretionary contributions that are neither required nor expected (Muchinsky, 1996). The most frequently used term for this phenomenon is Organizational Citizenship Behavior (OCB). OCB has also been defined in terms of

prosocial organizational behavior (e.g., Brief & Motowidlo, 1986; Puffer, 1987), altruism (Rushton, 1980), extra-role behavior (Puffer, 1987), and volunteering (Organ, 1988a).

As Katz (1964) and Graham (1986) point out, these behaviors usually are not formally monitored nor are they explicitly accounted for by the organization's reward system. They do, however, provide the organization with the adaptation and innovation necessary for long-term survival and growth. Indeed, "employees who exhibit such prosocial behavior are highly valued by their managers and by the organizations in general. This makes sense because they contribute above and beyond the normal requirements and expectations of the job" (Muchinsky, 1996, p.281). In fact, empirical studies of performance evaluation reveal the degree to which citizenship behavior influences subjective judgments of job performance.

Potentially important and influential, extra-role behaviors have been shown to be directly linked to an employee's perception of fairness in the organization. As Greenberg (1993) points out, employees will behave altruistically toward the organization in which they work when they believe those organizations have treated them fairly. Organ proposed that fairness leads to OCB because a social exchange relationship develops; fair treatment inspires confidence that one's OCB will, in the long run, meet with some form of reciprocation by the organization and its leaders. Thus, Moorman (1991) concludes that if supervisors want to increase citizenship behavior among their employees, they should work to increase the fairness of their interactions with employees.

In summary, how EPM is used within an organization has implications for an employee's perception of fairness. These perceptions, in turn, may predict the levels of employee OCB; behavior that is highly valued by organizations. To date, however, little research has examined the links between how EPM is used, perceived fairness and OCB.

Hypotheses

Rooted in equity theory (Adams, 1965), referent cognition theory (RCT) provides a theoretical framework in specifying whether people will resent an injustice (Folger, 1986). Specifically, RCT defines the basis for resentment as consisting of the comparison between reality (what happened) and an alternatively imaginable referent state (what might have happened instead). Thus, counterfactual thinking involves the psychology of "what might have been" (Folger, 1986, p. 147). However, unlike equity theory, RCT assumes outcomes are evaluated in terms of their relationship to any and all background instumentalities. That is, individuals will assess an outcome (e.g., pay) in light of the events and circumstances leading up to that outcome (Folger, 1986). Among these instumentalities, procedures (i.e., rules, regulations, decision making practices, mechanisms of implementation) are often the focus of special attention.

Referent cognition theory includes the notion of "psychological distance" to a preferred outcome - the distance between the actual outcome and an imagined or simulated referent outcome (Folger, 1986). More precisely, "psychological closeness" is a function of the ease with which an alternative state of affairs can be imagined. Obviously, the most salient alternative outcome is not always better than one's actual outcome. RCT, then, makes the distinction between high referent outcomes and low referent outcomes where a high referent outcome is an (imaginable) outcome that represents a more favorable state than reality (e.g., I received $5; I can easily imagine ways I might have gotten $10 instead) and a low referent outcome represents a state that is not any better than reality (e.g., I got $10, and nothing I can imagine could have gotten me any more than that). Thus, maximal resentment requires a high referent outcome (Folger, 1986).

From this foundation, it is expected that an individual would perceive less procedural fairness and experience greater resentment under those conditions in which procedures and outcomes (e.g., pay dependent on stringent, highly-enforced rules and

regulations) are evaluated relative to other, easily imaginable, less demanding procedures with similar or preferable outcomes (i.e., high referent outcome). This has been demonstrated with workers subjected to EPM. Specifically, workers who are subjected to frequent electronic performance monitoring (i.e., highly invasive) perceive less fairness in the appraisal system than those who are monitored at relatively moderate levels (Ambrose & Alder, 1996).

In the present study participants were informed of the other monitoring conditions to which they could potentially belong before being randomly assigned to one. This information was given in the context of describing the study as an investigation of alternative EPM performance evaluation systems. In this way participants were made explicitly aware of the different procedural (monitoring) conditions while keeping the study from sounding contrived. Moreover, participants were informed as to how performance is rewarded in each of the three conditions so that the potential outcome for each monitoring condition was made salient. Thus, in terms of RCT, hypothesis 1a predicts that:

H1a: The level of monitoring will significantly predict participant ratings of the different facets of procedural justice.

Because EPM systems may link pay to performance and increasing the level of monitoring implies more errors are tracked, highly monitored participants will more likely have their errors captured and, thus, their pay would be lowered accordingly. Based on this, it is expected in Hypothesis 1b that:

H1b: Errors will significantly predict participant ratings of different facets of procedural justice.

Organ (1988a, 1990) has suggested that the tendency for an individual to engage in OCB is influenced largely by organizational justice, defined as an employee's perception of being treated fairly by the organization. Moreover, research (e.g., Konovsky & Folger, 1991; Moorman, 1991; Niehoff & Moorman, 1993) has shown that OCB is correlated

positively with procedural justice, defined as the extent to which fair procedures and processes are in place and adhered to (Leventhal, 1980).

Consistent with why perceptions of fairness are related to OCB originates from Blau's (1964) definition of the difference between economic and social exchange. Organ (1988a) argues that fairness perceptions may influence OCB by prompting an employee to define his or her relationship with the organization as one of social exchange. Because social exchange exists outside strict contracts, the exchange tends toward ambiguity, allowing for discretionary, prosocial acts by the employee. Organ (1988a) wrote "the inherent ambiguity of such a system frees the individual to contribute in discretionary fashion without thinking that this will be acquiescence to exploitation" (p. 553). In other words, if employees consider themselves in conditions of social exchange, they may be more likely to exhibit OCB.

The value of OCB is that specific acts of citizenship can be described as examples of either information resources or service resources (Foa & Foa, 1974, 1980). Thus, OCB appears to be a reasonable and likely way in which an employee can exchange the social rewards brought on by perceptions of fairness (Moorman, 1991). Interestingly, the OCB may consist of behaviors relating to the task performance being monitored. Moreover, the OCB may comprise more generalized behaviors not necessarily linked to the performance task. Because participants who are highly monitored are expected to perceive the least amount of procedural justice, it is hypothesized that:

H2: The level of monitoring will be negatively related to OCB relating to the experimental task and,

H3: The level of monitoring will be negatively related to OCB relating to generalized behavior beyond the experimental task.

It has been suggested that EPM influences productivity in a manner that is consistent with the social facilitation framework (Aiello & Kolb, 1995). The social facilitation framework predicts that simple-task performance will be enhanced by the presence of an audience, whereas complex-task performance will be debilitated by social presence (Zajonc, 1965). In essence, EPM has the same influence on task performance as an audience. Within this framework, it is be expected that the best performance (i.e., fastest and most accurate) would come from high-ability participants who are electronically monitored. Conversely, the poorest performance (i.e., slowest and most inaccurate) would be derived from low-ability, monitored participants.

Aiello and Kolb (1995) have demonstrated this pattern of results. In their study involving data entry, they found that, as the social facilitation framework would predict, monitoring appeared to intensify performance in accordance with preexisting ability levels. High-ability participants performed faster on a simple task when they were monitored than when their work was not observed. In contrast, low-ability participants actually keyed fewer entries when they were monitored. So, when monitored, faster workers became faster, and slower workers became slower (Aiello & Kolb, 1995). Based on the foregoing discussion, Hypothesis 4 predicts that:

H4: There will be a significant ability by monitoring interaction on performance.

Specifically, a disordinal interaction is expected whereby highly and moderately monitored participants, compared to unmonitored, evidence lower performance scores at lower ability levels and higher performance scores at higher ability levels. It is further expected that the intensity (i.e., intrusiveness) of monitoring will further intensify differences in performance. Specifically, Hypothesis 5 predicts that:

H5: Higher ability participants in the highly monitored condition will have the highest performance scores, whereas lower ability participants in the same condition will have the lowest performance scores.

Method

Overview

A laboratory study was developed to examine the relationships between the way in which EPM is used, perceived fairness and OCB. The primary question that was addressed was whether the invasiveness of EPM (i.e., the degree of performance data captured by electronic monitoring) affected perceptions of fairness and, in turn, OCB. Second, the relationship between the invasiveness of EPM and task performance was also examined. To examine these issues, undergraduates were hired to complete a data-entry task, entering data into a computer from hard-copy questionnaires under one of three time-limited conditions: Highly monitored, moderately monitored, or unmonitored task performance. In all three conditions, participants were (initially) paid 33 cents for each questionnaire successfully entered into the computer.

Parenthetically, though the same performance data was recorded for participants in all three conditions, it is important to note that highly monitored participants were made to correct four different types of typing errors, while moderately monitored participants were made to correct only two types of typing errors during the performance task (see method below). The unmonitored condition, in this case, was used for comparison (baseline measures) against the two other groups in ratings of procedural justice, actual performance and OCB measures. That is, unmonitored participants were not made to correct errors of any type during the performance task. Thus, ability notwithstanding, highly monitored participants were most likely to have errors captured by the computer and, in turn, most likely to have their performance slowed by having to correct mistakes. In a performance-based pay system with a fixed time limit to enter the data , it is these participants who were *most* likely to have their pay affected by their task performance.

In terms of experimental conditions, it was decided to focus exclusively on procedural justice (i.e., the processes associated with the EPM system) for a number of

reasons: First, for ethical reasons, it was not possible to divide the group on an arbitrary outcome or pay (i.e., distributive justice) basis. With random assignment being used, this would have meant providing participants with arbitrarily dissimilar rewards. This is not only ethically unsound, it would call into question any comparisons made between the groups. In other words, it was not considered appropriate, or even realistic, to draw comparisons between groups receiving arbitrarily different outcomes. However, because participants received pay dependent on their performance, it was considered prudent to measure perceptions of pay in relation to the work they performed (i.e., distributive justice). Thus, perceptions of distributive justice were measured as a covariate and, thus, controlled for in the second step of the analyses so that the affect of monitoring on ratings of procedural justice and OCB rates could be isolated.

Second, to include an interactional justice condition would have meant providing participants with dissimilar types of feedback. Likely, the two choices would contrast supportive, respectful performance feedback by the researcher (i.e., quantitative and qualitative feedback) with simple computer performance feedback (i.e., quantitative feedback only). One problem with this approach is that participants in the personal feedback condition may have engaged in citizenship behaviors simply because they liked the researcher. This hinders the generalizability of the results by introducing a social desirability component not within the purview of the present study. Instead, all participants received their performance feedback in the same fashion. In this way the performance feedback interaction was held constant across conditions and, thus, helped to control for any differential influence of the feedback interaction in ratings of procedural justice and OCB rates.

After completing a short practice session and the experimental data-entry performance task, participants in each condition received performance feedback information via computer display. This feedback included: (a) the number of errors made, (b) the total

number of questionnaires completely entered, and (c) their final pay (based directly on the number of questionnaires entered). Thus, in each condition, pay was directly linked to performance. Also, all participants were informed beforehand that the experimenter would briefly check their entered data at the end of one hour. This precaution deterred any gross lapses in accuracy (see procedure below).

Participants were then afforded the opportunity to engage in OCB. Specifically, each was asked if he or she would like to: (a) volunteer their time in entering questionnaires into a computer on a future (unpaid) university research project **and/or**, (b) volunteer their (unpaid) time in helping to distribute information/promotional pamphlets concerning a university research unit at local business fair. After being afforded the opportunity to engage in *either or both* OCBs, participants were asked to fill out a context-specific questionnaire assessing their perceptions of procedural and distributive justice. All participants were then debriefed and paid a total of $10 (including performance pay) before leaving the session.

Pilot Testing

A preliminary phase was necessary for a number of practical and logistical reasons. First, participants in this study were asked to enter data from questionnaires into a computer, so the content and quantity (including duration) of the task set had to first be determined. Specifically, what kind of data was to be entered and from how many questionnaires needed to be set. Second, it was necessary to ensure that the instructions and information provided to participants in the study phase were clear and easy to understand.

Because performance data would be collected under timed conditions in the study phase, it was necessary to design a task in which there was some variability in this measure. In other words, the task needed to be designed so that ceiling effects for performance (accuracy and speed) were avoided. Thus, the final task set was designed such that it was: (a) challenging, and (b) difficult to complete in the time allowed. This was achieved by

having a number of experienced typists enter the data from as many questionnaires as possible in a timed session after having had practice doing so. The number of questionnaires entered by these typists then served as a framework by which to calculate the number of questionnaires given participants to enter in the experimental session to ensure that ceiling effects did not occur.

It was also essential to ensure that instructions were clear and that each condition in the study phase be delivered appropriately and believably by the experimenters. To do this, during both the pilot and experimental phases of the study, participants were asked to answer two short questions regarding the study (see manipulation check items below). In the pilot phase, responses to the manipulation check items assisted in determining appropriate and consistent delivery of subsequent experimental conditions.

The pilot or preliminary phase included six participants solicited in the same manner as the study phase. Participants were randomly assigned to each of the three experimental conditions. In the end, data captured from these participants was not included as part of the final data set. The procedures, equipment and timing of each condition were identical in both phases.

Participants

A total of 92 undergraduate students from a medium sized Western Canadian university were recruited from the Department of Psychology's current subjects pool listing. Participants were told that the paid work they would be doing may be used by a research unit run in conjunction with the Industrial/Organizational psychology graduate program at the university. It should be noted that undergraduate students are often hired by the unit to aid in different consulting contracts undertaken by I/O graduate students and faculty. In this way, participants were made to feel as though they were "working" for an actual organization and providing information potentially valuable to that company. This aided in increasing the realistic nature of the study as well as the generalizability of the results in that

participants would be more likely to treat the context as a "working" relationship and the researcher, then, as somewhat of a supervisor.

Also, because volunteering behavior was measured in this study, emphasizing to participants the practical, "working" nature of the present task allowed them to look upon future volunteering as truly voluntary and not simply an extension of the present study. That is, participants in the present study were possibly volunteers by nature, so by shifting the "volunteer" emphasis to a "working" emphasis in the present context freed participants from feeling obligated to volunteer for unpaid projects in the future. Also, it was made explicit to each participant that the volunteering opportunities were actually part of studies for the same research organization (i.e., either the university itself or the particular university research unit), but were not associated with the present research study. In this way, participants' future volunteering would be at an organizational level, but, at the same time, not imply any obligation.

Procedure

Potential participants were told that data needed to be entered and that they would be paid for their involvement. Potential participants were also informed that we were interested in examining ways of evaluating performance when students are hired. If they agreed to participate, each participant was asked to carefully read and sign an informed consent sheet before participating (see Appendix A).

Participants' pre-existing data-entry ability was a factor so it was essential to first establish the skill level of each participant. This was necessary so that higher- and lower-ability data-entry performance could later be compared across monitoring conditions. It was made clear to all participants at this point, however, that their performance on the following tasks would not impact, whatsoever, their chances in being hired by, or in being asked to volunteer for the university or the particular university research unit in the future.

Participants' typing ability was assessed from their typing performance (i.e., speed and accuracy) during a five minute practice session prior to the experimental condition. Each participant was first familiarized with the task set, questionnaires and computer and shown how to enter the data before beginning the practice session. Though this session was electronically monitored, it was explained to participants that such monitoring was simply for purposes of having a baseline measure. In other words, it was made clear that performance during the 5 minute practice session had no impact on final performance or outcomes. Ability was measured by totaling number of characters entered into the computer and subtracting the number of errors during the five minute session. In the present context, high- and low-abilities were treated as a continuous variable. This was done so as to not lose information regarding a participant's actual data-entry skills by categorizing him or her into a performance group (e.g., high versus low ability).

Participants were then fully informed about the three experimental conditions to which they could possibly be assigned. Each was then randomly assigned to one of the three groups - two monitoring and one unmonitored - and were run individually. Random assignment to conditions was chosen over matching participants on ability because it was felt that through matching on ability we might be inadvertently matching on some other unforeseen trait or dimension that may influence the results. Moreover, the process of random assignment should equally distribute participants on ability throughout the three conditions.

The participants were each given a task that involved entering the responses from hard-copy questionnaires into a computer. As previously mentioned, the parameters (i.e., quantity, difficulty, content and presentation) of the task set were first determined in the pilot phase. All participants were given thirty minutes to enter data and were instructed to work as quickly and accurately as possible. All participants were informed that they would be paid $0.33 cents for each complete questionnaire entered and that the experimenter

would briefly check their data-entry at the end for any gross lapses in accuracy (i.e., participants purposefully entering correct patterns of wholly inaccurate data or, as with the unmonitored condition, entering irrelevant data in order to finish more quickly).

Participants in the monitored conditions were informed that pattern errors were recognized by the computer on a questionnaire by questionnaire basis. If an error was made, the computer was programmed to stop the participant from continuing on to the next questionnaire until the necessary correction(s) had been made. To help the participant in making corrections, the computer was also programmed to provide information regarding the location (by row and column number) of any error(s). Those in the unmonitored condition, however, were informed that though their performance would be recorded by the computer, it was only for the purpose of comparison. That is, unlike those in the monitored conditions, unmonitored participants were "free" to make errors..

In each condition, feedback regarding performance was provided by the computer. Participants in the unmonitored condition received their feedback information in the same manner as those in the monitoring conditions: (a) total number of error(s) made in the practice, and experimental conditions, (b) the total number of questionnaires successfully completed and, (c) their pay (based on the total number of questionnaires completely entered). At the end of the task performance session, each participant received their performance feedback information via the computer and was paid by the experimenter accordingly. If a participant was able to successfully enter twenty-five questionnaires in the time allotted, for example, they received $8.25 (i.e., 25 x .33). Thus, *in each condition*, pay was directly linked to performance.

After being paid based on their performance, participants were asked if they were willing to volunteer their time in entering data from questionnaires into a computer for a future, unpaid research project **and/or** volunteering their time in handing out promotional/information pamphlets at a business fair for a university research unit . That is,

if participants were interested in volunteering, each was afforded the opportunity to volunteer for one or both of the projects. If interested, participants had to sign-up for specific times and dates. Following this, each participant was then asked to complete a questionnaire assessing his or her perceptions of procedural, distributive and interactional justice in the present study (see Appendix B) . Items for the thee types of justice were intermixed in a single questionnaire so that procedural items (i.e., the items of central interest) were not isolated and particularly salient.

At the completion of the study, participants were fully debriefed (see Appendix C). During debriefing, participants answered a few short manipulation check items. For ethical reasons, every participant in the then study received the same amount of money before leaving the room, regardless of the condition to which he or she had previously been assigned. That is, at the end of the debriefing session each participant received a total of $10, including performance pay.

Independent Variables

High Monitoring. One third (n = 30) of the participants were randomly assigned to the high monitoring condition. In this condition, participants were told that four patterns of their data entry would be constantly monitored by the computer. Specifically, the computer was programmed to recognize and record errors in line length (i.e., spacing), individual character misplacement (i.e., numbers where letters should be or visa versa), number range errors (i.e., incorrect number string/sequences) as well as shift key errors (i.e., confusing upper and lower case or shifted entries). Participants were visually informed (by the computer) of errors after completing each questionnaire, notified of error location(s) and prompted to correct the error(s) before continuing on to the next questionnaire. Participants were not permitted to continue entering data by the computer until error(s) for each questionnaire had been corrected. However, if, after three attempts at correcting mistakes, participants wished to quit attempting to correct error(s) on that particular questionnaire,

they were given the opportunity to hit the "skip" key; essentially discounting the questionnaire from their final pay.

Moderate Monitoring. One third (n = 30) of the participants were randomly assigned to the moderate monitoring condition. In this condition, participants were told that only two dimensions of their data-entry patterns would be constantly monitored by the computer. That is, the computer was programmed to recognize and record only line length and number range errors. Participants in this condition were also subject to the same error notification and correction constraints as those in the highly monitored condition. Participants in this condition were given the same opportunity to hit the "skip" key; essentially discounting the questionnaire from their final pay.

Unmonitored. Approximately one third (n = 32) of the participants were randomly assigned to the unmonitored condition. In addition to recording the total number of questionnaires entered (on which payment was based), it was also necessary to record accuracy data for the purpose of comparison without potentially influencing participants' performance through monitoring. Thus, participants were told that their performance would be monitored by the computer but that the accuracy of that performance would have no bearing on their performance pay. In other words, complete performance data was recorded by the computer as in the highly monitored condition but only the total number of questionnaires successfully completed would be considered in the calculation of their pay. In consideration of later comparisons, it was considered prudent to capture as much performance data for participants in this condition as for those in the highly monitored condition. Thus, unmonitored participants received performance feedback information on the same four dimensions as those who were highly monitored.

Ability. Ability was operationalized as the total number of characters successfully entered into the computer minus the total number of errors made by a participant during the

five minute practice session. All participants received identical, randomly generated, information to enter into the computer.

Dependent Variables

Performance. Performance was operationalized as the total number of characters successfully entered minus the total number of errors made in the half hour experimental session. The maximum number of questionnaires that could be entered was 30.

Pay. Pay was operationalized as the actual performance-dependent dollar figure received and specific to each participant. Because performance-dependent pay was based on the total number of questionnaires successfully completed, this measure was in 33 cent increments. Thus, pay ranged from $0.00 to $10.00.

Errors. Errors were operationalized simply as the total number of incorrect characters (including errors in line length, alpha/numeric mistakes, shift key errors, and incorrect number range entries) entered by a participant during the 30 minute experimental condition. It should be noted that all four error dimensions were *recorded* for each participant, regardless of the condition to which he or she belonged. This was done so that participants could be compared, on the same type of information, across the three monitoring levels.

Procedural Justice. Greenberg (1996) has argued for the use of context-specific measures when investigating organizational justice issues. Studies focusing on general attitudes toward fairness are less informative than those that examine the fairness of issues arising in specific contexts. "To understand people's feelings about fairness requires asking them questions that focus on the unique aspects of the situation in question" (p. 402). Greenberg goes on to posit that generic justice surveys are much less insightful than more focused or context-specific ones.

To capture the unique issues of justice made salient in various settings and to assess the generalizability of the phenomena being studied, questions about justice should be

carefully matched to the context of interest. Thus, items used in the following justice scales were reworded or modified to specifically match the present context of electronic performance monitoring.

In the present study, procedural justice was defined in terms of the degree to which fair procedures were used to make decisions. Items representing these procedures originated from the rules of procedural justice developed by Leventhal (1980). Specifically, questions focused on procedures designed to promote consistency, bias suppression, and ethicality. Consistency, in the present context, refers to whether or not decisions regarding outcomes based on dissimilar rules or procedures are perceived as fair. For example, "In terms of the amount of monitoring, I feel that the consistency between groups was fair". Bias suppression refers to perception that decisions regarding performance are being made without apparent bias. For example, "The experimenter made her decisions regarding my performance without apparent bias". Ethicality, in the present context, refers to whether or not the differences in monitoring between the groups are perceived as ethical. For example, "I feel that, ethically, the difference in monitoring between the groups was fair".

It is important that the different aspects of procedural justice be well articulated because, as pointed out earlier, it has been suggested that the mechanisms that influence perceptions of fairness also underlie an individual's reaction to monitoring (Ambrose & Alder, 1996). If this is the case, it is important that it be determined which of those factors of procedural justice most contributes to subsequent perceptions of fairness. In terms of EPM, the differential contribution of these underlying mechanisms has, to date, not been well articulated or researched.

In addition to questions regarding the specific aspects of procedural justice, it was considered important to also include one item capture the context-specific differences between the groups for perceptions of general or overall procedural justice: "I feel that the amount of performance monitoring I experienced was unfair". This was done to determine

if, perhaps, overall perceptions of procedural fairness are articulated in the same way as the specific index items across conditions. Also, because privacy has become such a salient issue for employees in the context of EPM (e.g., Anon, 1987; Lund, 1992; Stone & Stone, 1990) a question that assessed individual perceptions of privacy was also included as part of the procedural index: "I feel that the amount of monitoring to which I was subjected invaded my privacy".

Items in the procedural justice measure were adapted from an 11-item scale developed by Folger and Konovsky (1989). Modifications to the scale were situation-specific and were used to capture differences in perceived procedural justice anticipated between the monitoring groups. Ultimately, only ratings of ethicality, overall fairness, bias suppression, consistency and privacy were used in the analyses. In the present context, it was only these five items that were relevant to group procedural differences. Moreover, an overall fairness item was included to determine if, as suggested by past research (e.g., Tansky, 1993), a less articulated sense of fairness plays a role in subsequent OCB. Originally, Folger and Konovsky used a 5-point Likert-type scale, however, ratings on the present questionnaire were derived using a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). The scale itself was modified so that potentially small discriminations could be captured between the groups in their perceptions of procedural justice. Moreover, procedural items were analyzed on an individual basis rather than as a composite because of the theoretical interest in the relative contribution and operation of the separate scores. Reliability and validity measures attest to the original measures' strong psychometric properties (e.g., Folger & Konovsky, 1989; Greenberg, 1993; Moorman, 1991) with all reported reliabilities above .85.

Distributive Justice. In the present context, distributive justice was defined as the fairness of outcomes and consequences of organizational processes and decisions. Specifically, distributive justice was operationalized in terms of the perceived fairness of

rewards (i.e., pay) received by participants relative to performance inputs. Items assessing these outcomes were represented in a distributive justice index developed by Price and Mueller (1986). Each item assessed the degree to which the participant believed that he or she was fairly rewarded in light of the amount of monitoring experienced or effort put forth. For example, items included: "You were fairly rewarded considering the responsibilities of the task", "You were fairly rewarded for the amount of effort you put forth" and, "You were fairly rewarded considering the degree your performance was monitored". Again, ratings were derived using a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). The three items assessing distributive justice were combined into a composite score and served as a covariate when assessing perceptions of procedural justice. Work cited in Price and Mueller (1986) attest to the original measure's psychometric properties with all reliabilities reported above .90

Organizational Citizenship Behavior (OCB). Because job performance is often heavily influenced by situational contingencies, finding an effect of employee attitudes like perceptions of fairness have been difficult (Organ, 1988a). To capture the organizational context of such situational contingencies, Organ (1988a) has argued for the use of site-specific measures of OCB. In the present study, two measures of site-specific OCB were examined: (1) volunteering for a future unpaid data-entry task for the university and, (2) volunteering to help distribute information/promotional pamphlets at a business fair for the same university research unit that was associated with the present study.

Fishbein and Ajzen (1975) have proposed three major factors that influence the magnitude of the relationship between intention and behavior. They include: (a) the correspondence in levels of specificity or the degree to which intention and behavior correspond to the behavior itself, the target, the situation, and the time, (b) the stability of intention such that a shorter time interval between the measure on intention and the behavior

results in a higher correlation between intention and behavior, and (c) the degree to which carrying out the intention is under the volitional control of the person.

To meet these requirements, the measures of organization-specific volunteering developed for this study provided participants with a full description of the tasks that would be involved and what they would be doing if they volunteered their time. Specifically, participants were asked to identify the number of (unpaid) hours, if any, they would be willing to enter data from questionnaires into a computer in an upcoming university research project. If participants indicated that they would volunteer, they were asked to choose the specific date(s) and time(s), within the time constraints of the research project itself, that they would intend to do so. Moreover, the starting dates of the potential volunteer project was set within one month of the present research project. Volunteering was recorded in one-hour increments to a maximum of twelve hours total (see Appendix D). The names of participants not wanting to volunteer were simply recorded with a number of "zero".

A one month time frame for the upcoming project was chosen so that the personal schedules of those volunteering would not pose great constraints on possible volunteering time. In other words, if a one week frame had been chosen, for example, and the person was particularly busy that week, they may have been unable to volunteer as many hours as desired, or not at all.

It was made clear to all volunteers that they should be committed to volunteering for the total amount they record. That is, signing the sheet would likely result in volunteering for the full number of hours recorded. It was made clear that volunteering in this case was for an unpaid, unrelated research project for the university. These clarifications accomplished three things: First, participants were made to feel that they would likely have to follow through on their volunteer commitment. Second, because volunteering was not for the present experimenter, any OCB would be made on an organizational level and not for the researcher as an individual. In this way, participants

were discouraged to volunteer simply because they liked the experimenter. Such information regarding organizational-level (vs. individual-level) volunteering would be more generalizable.

The second measure of OCB, a more generalized measure of volunteering, was operationalized as the number of (unpaid) hours, if any, a person signed up for an upcoming business fair handing out information/promotional pamphlets. Again, if participants indicated that they would volunteer, they were asked to choose the specific date(s) and time(s) (within the fair dates and times provided) in which they were willing to do so. Also, start dates were set within the next month relative to the present project. Hours were recorded in one-hour increments to a maximum of eight hours total (see Appendix D). As with the data-entry measure of volunteering, it was made clear to participants that signing the sheet would likely result in volunteering for the full number of hours recorded and that those hours were unpaid.

This second measure of volunteering was chosen for two reasons: First, to determine if the two types of volunteering were differentially affected by the particular monitoring conditions and/or performance levels. That is, perceptions of injustice may have affected a more public display of support for the research unit differently than for simply entering data into computers for the university. Also, this second measure of volunteering provided us with a more generalized (less research-experience related) form of volunteering. That is, one concern in only offering participants the opportunity to engage in entering questionnaires was that, being undergraduate students, some may have done so simply to gain research experience. Although random assignment to conditions would have, largely, offset this bias it was still considered prudent to collect a less potentially "ulterior motivated" measure of volunteering.

Previously unused sheets were provided to participants to record names and hours for both types of volunteering. In other words, participants did not see the names, hours or

numbers volunteered by previous participants. This was done to avoid the possibility of anchoring or influential effects of prior respondents. Also, participants were asked to put both volunteering and justice sheets into separate envelopes to help ensure and impart a feeling of anonymity and confidentiality (i.e., so that the researcher had no idea of their justice ratings nor of any hours volunteered for future projects).

Manipulation Check Items. During the debriefing session, each participant was asked to answer a few short questions regarding the experiment. This ensured that the separate conditions were being delivered clearly and believably by the experimenter during the study phase. Questions included: "I believed the experimenter's explanation of what the experiment was about" and "I knew beforehand that I would be getting paid more (i.e., the full $10) at the end of the experiment". The response options to these questions were agree or disagree. Asking such questions alerted the experimenter to those participants that may have had previous knowledge of the experiment. This was necessary simply because many of the participants that participated were from similar programs and classes.

Results

Analysis of the two manipulation check items revealed that two participants in the pilot phase guessed at receiving more money at the end of the study and did not believe the explanation of the experimenter as to the purpose of the study. Inspection of the individual item responses revealed that these were the same two participants. Because these participants were not part of the experimental phase, their data was not included in the final analysis. Also, the relationships between participant gender, age, year of study, education major and the focal dependent variables used in the study were examined. There were no statistically significant relationships between the demographic variables and either the justice or OCB dependent measures, $p>.05$. In addition, the demographic variables did not

significantly interact with experimental condition in predicting the dependent variables, $p>.05$.

The means and standard deviations for each of the procedural justice measures by monitoring condition are given in Table 1, and the correlations among these same measures are reported in Table 2 (see Appendix E). The internal consistency (coefficient alpha) of the five procedural justice scale items was .71. To determine whether the level of monitoring significantly predicted participant ratings of procedural justice, as a whole, (Hypothesis 1a) a one way multivariate analysis of variance (MANOVA) was conducted using five procedural component measures; three indices based on Leventhal's (1980) dimensions of bias suppression, ethicality, and consistency, one index based on perceptions of privacy discussed by Lund (1992), as well as one index regarding perceptions of overall fairness. The MANOVA results indicated a statistically significant effect of monitoring on the combined procedural justice ratings, $F(10, 166) = 1.87$, $p = .05$, Wilk's $\lambda = 0.81$.

Follow-up discriminant function analysis (DFA) revealed one statistically significant eigenvalue, with monitoring condition accounting for 15% of the variance in the linear justice composite. Inspection of the structure coefficients revealed that all of the justice measures, save for the overall fairness index, contributed significantly to the composite (structure coefficients were as follows: .71, ethicality; .11, overall fairness; .53, bias suppression; .53, consistency; and .59, privacy) suggesting that the individual indices share a common justice construct. Examination of the group centroids (i.e., group means on the canonical variate scores) revealed that moderately monitored participants had the lowest mean on the new justice composite ($M = -.52$) followed by highly monitored ($M = 0.07$), and unmonitored participants ($M = .44$). Knowing that higher scores indicate less perceived fairness, this indicates that unmonitored participants perceived the least fairness on the new linear justice composite, followed by highly and moderately monitored participants, respectively.

Because each of the procedural indices was theoretically interesting, separate planned comparisons were conducted comparing each of the monitoring groups on the individual justice measures. In those cases where the specific contrast was non-orthogonal, statistically significant findings are reported at the .025 alpha level. Statistically significant monitoring effects were obtained for ethicality such that moderately monitored participants (M=1.67) perceived significantly *greater* ethicality in monitoring than both unmonitored participants (M=2.66), $t(89) = -2.66$, $p < .025$, $\eta^2 = .13$, and highly monitored participants (M=2.37), $t(89) = 1.85$, $p < .05$, $\eta^2 = .06$. For ratings of overall fairness, highly monitored participants (M=3.23) perceived significantly *less* overall fairness than both moderately monitored participants (M=2.43), and unmonitored participants (M=2.44), $t(89) = 2.05$, $p<.05$, $\eta^2 = .07$, and $t(89) = 2.08$, $p < .025$, $\eta^2 = .06$, respectively. In terms of bias suppression, moderately monitored participants (M=1.30) perceived significantly *less* decision bias (i.e., greater fairness) by the experimenter than unmonitored participants (M=1.88), $t(88) = 2.00$, $p<.025$, $\eta^2 = .08$. Ratings of privacy also revealed statistically significant differences between the groups such that highly monitored participants (M=2.9) perceived significantly less privacy than moderately monitored participants (M=1.9), $t(88) = 2.50$, $p<.05$, $\eta^2 = .10$.

Distributive Justice as Covariate

Brockner et al., (1994) and others (e.g., Brockner & Wiesenfeld, 1996) have elucidated the interaction between procedural justice and outcomes in the workplace. Thus, to the extent that perceptions of fair reward may be influencing ratings of procedural justice, it was of important theoretical interest to understand the role of the individual procedural justice indices apart from perceptions of distributive justice (i.e., perceived fairness of rewards).

Separate planned comparisons with the distributive justice score composite as the covariate were conducted comparing each of the groups on the individual procedural justice

indices. The internal consistency (coefficient alpha) of the three distributive justice scale items was .86. Moreover, the assumptions underlying ANCOVA, namely, a statistically significant linear relationship between the dependent variable and the covariate, and the homogeneity of regression slopes between the monitoring conditions were met. Reported means have been adjusted for the covariate.

The results of the planned comparisons ANCOVA revealed a statistically significant monitoring effect, controlling for distributive justice ratings, for ethicality, $t(59) = 2.67$, $p < .025$, $\eta^2 = .09$ such that moderately monitored participants (M=1.74) perceived significantly *greater* ethicality than unmonitored participants (M=2.59). For ratings of overall fairness, highly monitored participants (M=3.21) perceived significantly *less* overall fairness than unmonitored participants (M=2.46), $t(59) = 1.94$, $p < .05$, $\eta^2 = .05$,controlling for distributive justice. Comparisons for ratings of bias suppression indicated that moderately monitored participants (M=1.30) perceived significantly *less* decision bias by the experimenter than unmonitored participants (1.88), $t(59) = 2.15$, $p < .025$, $\eta^2 = .07$ when distributive justice scores were used as the covariate. Ratings of perceived privacy also revealed statistically significant differences between the groups when distributive justice was controlled for such that highly monitored participants (M=2.81) perceived significantly *less* privacy than did moderately monitored participants (M=2.02), $t(56) = 2.05$, $p < .05$, $\eta^2 = .06$.

Overall, the prediction that the level of monitoring would significantly predict participant ratings of procedural justice components (Hypothesis 1a) received limited support. Contrary to expectations, moderately monitored participants perceived less bias (i.e., greater procedural fairness) in the experimenter's decisions than unmonitored participants, regardless of perceptions of distributive justice scores. Also, moderately monitored participants perceived significantly greater ethicality in monitoring than unmonitored participants regardless of distributive justice ratings.

Because highly monitored participants were most likely to have their mistakes captured by the monitoring system and, thus, would be most slowed by such errors, Hypothesis 1b predicting that errors would significantly predict participant ratings of individual procedural justice components was tested for only the highly monitored group. Results of the separate linear regression analyses indicated that the number of errors made in the 30 minute experimental phase by highly monitored participants did not significantly predicted ratings of any of the procedural indices, $p > .05$.

To determine if this effect was confounded by possible perceptions of fair reward, ratings of distributive justice were entered hierarchically into the regression analysis as a covariate. All assumptions regarding ANCOVA were met for these analyses. Again, experimental errors for those in the highly monitored condition did not significantly predicted any of the procedural indices, $p > .05$. Thus, Hypothesis 1b was not supported, regardless of distributive justice ratings.

In Hypothesis 2 it was expected that the level of monitoring would be negatively related to OCB relating to the experimental task. To test this hypothesis, planned comparisons were conducted comparing each of the monitoring groups in terms of hours volunteered (i.e., OCB). Results of the comparisons revealed no statistically significant effect of monitoring for data-entry volunteering, $p > .05$.

As before, the role of distributive justice was of theoretical interest when examining participants' rate of volunteering. Thus, planned comparisons were conducted on the individual procedural indices using ratings of distributive justice as the covariate. As before, all assumptions regarding ANCOVA were met for these analyses. Results of the specific comparisons did not indicate a statistically significant effect of monitoring in the number of hours volunteered for the data-entry task, $p > .05$. Thus, Hypothesis 2 was not supported.

Similarly, it was predicted that the level of monitoring would be negatively related to OCB relating to generalized behavior beyond the experimental task (Hypothesis 3). Planned

comparison results revealed a statistically significant effect of monitoring such that moderately monitored participants (M=0.00), on average, volunteered for significantly fewer fair hours than unmonitored participants (M=1.00), $t(89) = -2.164$, $p < .025$, $\eta^2 = .07$.

To determine the role of distributive justice in participants' volunteering for fair hours, planned comparisons were conducted on the individual procedural indices, using distributive ratings as the covariate. Again, all assumptions regarding ANCOVA were met for the analyses, and reported means have been adjusted for the covariate. The results of the comparisons revealed that, once ratings of distributive justice were controlled for, the statistically significant effect of monitoring remained such that moderately monitored participants (M=0.1) volunteered, on average, significantly fewer fair hours than unmonitored participants (M=0.9), $t(59) = 1.84$, $p < .05$, $\eta^2 = .05$. Thus, Hypothesis 3 received limited support, regardless of distributive justice scores.

To determine if monitoring had a differential effect on performance for participants of different ability levels, (Hypothesis 4) a hierarchical regression analysis was conducted in which ability and monitoring condition were entered first, and the ability by monitoring interaction was entered on the last step. The means and standard deviations for both ability and performance by condition are given in Table 3 (see Appendix F). Results revealed a non statistically significant monitoring by ability interaction, $p > .05$. Thus, Hypothesis 4 was not supported.

It was expected in Hypothesis 5 that the intrusiveness of monitoring would intensify differences in performance between the groups. However, because the foundation of Hypothesis 5 was presupposed on the statistically significant ability by monitoring interaction of Hypothesis 4, no further probes of the interaction were carried out. Based on the non statistically significant results of the previous hypothesis, Hypothesis 5 was not supported.

Discussion

The primary purpose of the present study was to further our understanding of the relationship between EPM, organizational justice, and OCB. In particular, the goal was to elucidate some of the specific mechanisms underlying perceptions of fairness under conditions where performance is computer monitored. Additionally, one of the central questions being asked was if differences in the invasiveness of monitoring translated into behavioral changes and, if so, how? Theory and past research suggest that the intrusiveness of monitoring is associated with decreased perceptions of fairness (e.g., Neihoff & Moorman, 1993; Ambrose & Alder, 1996). There is a separate body of literature and research to suggest that decreased perceptions of fairness may lead to a decreased willingness to "go above and beyond the call of duty" in one's job role (OCB); a behavior that is vital to the longevity and overall effectiveness of an organization (Katz, 1964; Graham, 1986; Organ, 1990; Skarlicki & Latham, 1996). The present study, then, attempted to combine these two bodies of research and theory. To facilitate the clarity of the discussion, results are organized around the specific hypotheses.

Overall, Hypothesis 1a, which predicted that the level of monitoring would significantly predict participant ratings of different facets of procedural justice, received limited support. First, it was found that highly monitored participants perceived significantly less overall fairness than both moderately, and unmonitored participants. This is consistent with past research showing that workers who are subjected to frequent or invasive electronic monitoring perceive less fairness in the appraisal system than those monitored at relatively moderate levels (Ambrose & Alder, 1996). Also, as part of the procedural justice index, was the finding that highly monitored participants perceived significantly less privacy than moderately monitored participants. This finding, in part, supports the notion that highly monitored participants would perceive the greatest invasion of privacy. However, it was

expected that highly monitored participants would perceive significantly less privacy than unmonitored participants, as well; a finding not realized in the data.

Lund (1992) has suggested that monitoring, in general, is associated with feelings of invaded privacy. Results from the present research suggest, however, that moderate and highly invasive monitoring may be perceived differently in terms of privacy. It is clear that the moderate and highly monitored participants do not perceive the same degree of privacy. However, there were no statistically significant differences between highly and unmonitored participants in terms of perceived privacy. Such differences may be an artifact of the justice scale that was used. Although control condition subjects were monitored to collect performance data, these participants knew that the monitoring had no ramifications for any formal performance appraisal or pay decisions. When answering the justice questions (including the privacy question) control respondents may have chosen the scale midpoint (i.e., "neither agree/disagree") indicating that the item did not really apply because privacy issues relating to monitoring were simply not relevant to them. Thus, the monitoring may not have been salient at all the many of the control participants. Visual inspection of the data support this interpretation in so far as an inordinate number of "4" responses were provided by control participants to the privacy and other justice items. This, along with the fact that participants in both the moderately and highly monitored condition were affected little by the monitoring of their performance (i.e., small monitoring effect size) may have resulted in statistically nonsignificant or inconsistent difference between the group means on many of the justice questions.

In retrospect, there may have been three solutions to this unexpected occurrence: (1) employ a much more salient monitoring system, (2) in the context of the same scale, offer a "no opinion" scale response which would be associated with a value of zero ("0") or, (3) alter the scale anchors, altogether, from "not at all" to "extremely" . To make the monitoring conditions much more salient, it would be necessary to make the highly

monitoring condition much more intrusive or offer a much greater performance-based pay scale range. Though often, those in actual work environments are subjected to much more serious or intrusive monitoring along with greater performance-based pay ramifications (Whalen, 1995), in a laboratory setting, these options would be difficult to institute given the specific ethical guidelines of the university and the limited funds available to young researchers. The second and third options, however, only involve a small revision of the scale; options that should be considered in future research of this type.

Unexpected results were also found when groups were compared in terms of the two procedural justice components of perceived ethicality, and bias suppression. For these indices, it was found that moderately monitored participants perceived significantly *greater* ethicality than both highly, ***and*** unmonitored participants. This finding was in contrast to the prediction that those in the highly monitored condition would perceive *less* ethicality relative to those in the moderately and unmonitored conditions. Also, in terms of bias suppression where it was expected highly monitored participants would perceive the greatest decision bias, it was found that moderately monitored participants perceived significantly *less* decision bias by the experimenter than unmonitored participants.

There are a number of possible reasons why results for these two indices were not consistent with the hypothesis and past research. First, it may be that the hypothesis itself is incorrect. Past research is limited in terms of examining the relationship between the invasiveness of monitoring and perceptions of procedural justice - especially when considering the individual indices of procedural justice. Perhaps, ethically, people perceive moderate monitoring to be the most fair in that it captures objective performance data without being too invasive. Or, similarly, perhaps moderately monitored people perceive moderate monitoring as being associated with less decision bias than no monitoring at all or monitoring that is too invasive for the same reasons of objectivity. If true, these findings would suggest that perceptions of fairness, in relation to EPM, need to be better articulated

in terms of the specific indices of bias suppression and ethicality; increased monitoring may only be associated with decreased perceptions of fairness for specific procedural indices.

As previously described, the use of the scale for ratings of procedural justice items in shifting the group means may have contributed to the unexpected results. This, in conjunction with the small effect sizes of the monitoring manipulation may have contributed to difficulties in obtaining consistent statistically significant differences between the conditions on all of the indices.

Controlling for Distributive Justice.

Potential shortcomings in the scale and manipulation effect sizes notwithstanding, it is important to note that the present task was designed such that the different monitoring procedures led, necessarily, to differential outcomes (i.e., pay). There is research to suggest, however, that perceptions of fairness, in terms of procedural and distributive justice, are closely linked. Brockner et al. (1994), for example, found that when procedural justice was perceived to be low, individuals reacted more adversely to the extent that outcomes were perceived to negative. When individuals felt that procedural justice was relatively high, however, perceived outcome negativity was not related to their reactions. In terms of the present study, then, such an interaction might suggest that those in the highly monitored condition would be more sensitive to the procedures, simply *because* they are, likely, receiving less pay relative to those in the moderately and unmonitored conditions.

Knowing, then, that perceptions of procedural and distributive justice are often highly interrelated as they were in the present context, it may be that perceptions of unfair pay (i.e., low distributive justice ratings) may be what were driving ostensible statistically significant differences in perceptions of procedural justice, and, thus, obfuscating the interpretation of results. Are people feeling greater unfairness because of the actual procedures being used (our primary question) or are significant differences in perceived fairness largely due to differences in perceptions of fair pay (a distributive justice question)?

The inclusion of pay was incorporated for two specific reasons: (1) to make the differences between the groups more salient and, (2) to provide a more realistic and ecologically valid "working" environment that included pay based on individual performance rather than arbitrary rewards. Though not originally of primary interest to the study, the role of distributive justice in the present context, however, was still theoretically interesting. To better understand the role of distributive justice apart from perceptions of procedural justice, the univariate analyses conducted to test the hypotheses were replicated, controlling for ratings of distributive justice.

When distributive justice was controlled for, results changed somewhat. In particular, it was found that moderately monitored participants perceived significantly greater ethicality than those in the unmonitored condition, versus both the unmonitored and highly monitored when distributive justice ratings were not used as a covariate. Also, highly monitored participants perceived significantly less overall fairness relative to only unmonitored participants versus both unmonitored *and* moderately monitored participants when distributive justice was not controlled. Ratings of bias suppression, and privacy did not change significantly between the two sets of analyses.

Differences between these two analyses suggest that, in the present context, distributive justice does play a statistically significant role in perceptions of ethicality, and overall fairness. In terms of ethicality, those in the highly monitored condition were no longer significantly different from the unmonitored and moderately monitored participants when distributive justice ratings were controlled. In other words, when perceptions of fair pay are statistically removed from perceptions of procedural justice, those in the highly monitored group were no longer significantly different from either of the remaining two groups. The only remaining difference between the groups was that moderately monitored participants perceived significantly greater ethicality than unmonitored participants, just as in the first analysis. Differences between the two sets of analyses might suggest that, in terms

of ethicality, perceptions of pay play a role such that people will tolerate greater monitoring if it is associated with greater pay.

Also, in terms of overall fairness, the first analysis revealed that highly monitored participants perceived significantly less overall fairness than both moderately, and unmonitored participants. However, when ratings of distributive justice were controlled, those in the highly monitored condition perceived significantly less overall fairness than only the unmonitored participants. This difference between analyses might suggest that perceptions of pay may be what is driving differences in ratings of overall fairness between the highly and moderately monitored groups. Once perceptions of pay are controlled, statistically, differences between the two groups in terms of overall fairness, disappeared. Again, as with ethicality, people may be willing to tolerate less overall fairness in the invasiveness of monitoring provided they receive compensatory pay.

It is important to note that differences between the two analyses, in terms of both ethicality and overall fairness, may simply be an artifact of the scaling problems or small effect sizes highlighted earlier. However, it may also suggest that the differences in how moderate and highly invasive monitoring are perceived in terms of overall fairness and ethicality may be, largely, a product of differences in pay associated with the two types of monitoring.

It must be noted here that, though it is statistically possible to disentangle procedural and distributive justice ratings in the lab, it may not reflect what happens in actual working environments. The very nature of EPM dictates that, often, it is linked to performance-based pay systems. Employees understand, in turn, that more invasive systems will have greater ramifications for their pay. For example, if a system is designed to capture keystroke entries by an employee, the more highly monitored an employee is, the more likely it is that errors will be captured by the system. Often, such systems, in turn, form the foundation for performance-based pay decisions. Thus, ability notwithstanding, monitored employees

explicitly understand that highly invasive systems, whether computer- or video-based, are often associated with different pay or pay scales relative to unmonitored employees. From this perspective, then, the present study captures the unique nature of such systems. However, it is clear that, when attempting to focus on the procedural aspects of fairness, the dimensions of procedural and distributive justice become confounded. So, while it is statistically possible to disentangle the two dimensions in an effort to gain a better theoretical understanding of the role of perceived procedural fairness, it may be unrealistic to expect that such a separation takes place in the minds of employees. As pointed out by Brockner and Wiesenfeld (1996), these two dimensions of justice are interactive in their effects on individuals' attitudes and behavior; the procedures and outcomes associated with EPM are no exception.

Turning to Hypothesis 1b, it was expected that the number of errors would significantly predict participant ratings of different procedural justice components. It was found that the number of errors made in the 30 minute session did not significantly predict any of the procedural items, regardless of controlling for ratings of distributive justice. One possible reason why the data did not support the hypothesis may be that errors did not drive perceptions of procedural justice in the highly monitored condition. Because this hypothesis was largely atheoretical, there was no past research to suggest that mistakes during task performance do, indeed, form the foundation of perceived justice. This finding then, would lend support to the idea that perceptions of justice stem, in this context, from something other than the number of errors made during an electronically monitored performance task, even when those mistakes are the cause of lower pay.

Another possible reason why the data did not support the hypothesis may relate to problems with the scaling and effect size discussed in the previous section. It was assumed that errors would predict the whole range of perceived procedural justice indices, however, it may be that either mistakes, in this context, were not associated with a powerful enough

consequence (i.e., restricted pay range) or that the scale was not sensitive enough to capture consistent differences in perceptions of fairness as they related to the number of experimental errors. Last, statistical power was compromised in testing this hypothesis given that only the highly monitored participants were included.

In Hypotheses 2 and 3 it was predicted that the level of monitoring would be negatively related to OCB, both relating the experimental task as well as relating to generalized behaviors beyond the experimental task, respectively. Hypothesis 2, however, was not supported by the results, both when distributive ratings were, and were not controlled. Previous literature, however, shows that differences in perceptions of fairness should lead to differences in OCB (e.g., Skarlicki & Latham, 1996). In the present context, because differences in monitoring were expected to imbue significant differences in perceived fairness, differences in monitoring should, then, have led to differences in OCB.

There are a number of reasons why this relationship between monitoring and OCB was not replicated in this study. First, the studies on which the hypothesis was based are, largely, field studies. Measuring OCB in the lab can be, at best, logistically difficult to measure because of time-of-measurement issues. That is, OCB in a field setting, by it's very nature takes place at the discretion (including timing) of the individual. In a laboratory setting like this one, there needed to be time constraints placed on the commission of such behaviors in accordance with the time frame of the study and the guidelines dictated by Fishbein and Azjen (1975). Such parameters may create impractical constraints on how, when, where and what kind of OCB an individual wishes to engage in. Thus, the present lab setting may not have lent itself to the discretionary nature of OCB, making it difficult to obtain an accurate translation from perceptions of fairness to behavior.

Another reason for the fact that fairness perceptions did not translate into statistically significant group differences in OCB may relate, again, to the small effect sizes associated with the monitoring conditions. As shown in the first hypothesis, there were few or

inconsistent statistically significant differences between the groups in ratings of procedural justice. Such small differences in perceived fairness would not likely translate into consistent behavioral differences between the groups. Again, many of the studies on which this hypothesis was based were carried out in the field. It is here that differences in perceptions of fairness associated with certain decisions (e.g., pay decisions) would be much more dramatic or significant. This, in turn, would likely translate much more readily into behavior.

Hypothesis 3 regarding a similar predicted relationship between the level of monitoring and more generalized behaviors beyond the experimental task did, however, receive limited support. Specifically, a statistically significant effect of monitoring was found such that moderately monitored participants, on average, volunteered for significantly fewer fair hours than unmonitored participants. This statistically significant finding remained even when ratings of distributive justice were used as a covariate. This finding is consistent, in part, with past research regarding the relationship between perceptions of fairness and OCB (e.g., Greenberg, 1993; Skarlicki & Latham, 1996) where lower perceptions of fairness predict less OCB. These present findings, however, are not completely concordant with this relationship in that highly monitored participants, in this case, did not volunteer the least number of hours, as expected. The reasons for such unexpected findings are likely the same as those discussed in the previous hypothesis.

Because the OCB hypotheses were supported differently by the data, this may suggest that these two aspects of volunteering (i.e., data entry and fair) may operate differently in terms of their relationship with perceptions the indexes of procedural justice. Moreover, it is interesting to note that, even once distributive justice rating were controlled for, there was still a statistically significant effect of monitoring for fair hours. This supports the notion that participants were not volunteering in light of perceptions of their pay.

In Hypothesis 4 it was expected that monitoring would have a differential effect on performance for people of different ability levels. Subsequently, Hypothesis 5 predicted that such an effect would be further differentiated by the intensity of monitoring. The test of these hypotheses revealed no statistically significant ability by monitoring interaction. Thus, in the present context, it appears that computer monitoring does not affect people of different ability levels in a different way. This finding is in contrast to research by Aiello and Kolb (1995), for example, who demonstrated that monitoring appeared to intensify performance in accordance with preexisting ability levels. In other words, as the social facilitation framework would predict, high-ability participants performed faster on a simple task when they were monitored versus when their work was not observed. In contrast, low-ability participants actually keyed fewer entries when they were monitored (Zajonc, 1965).

There are a number of possibilities that might explain the disparity between past theory and research, and present results. First, it is important to note that the research on which this hypothesis was based (e.g., Aiello & Kolb), there was no reward implication for monitoring. The knowledge that rewards are linked to performance might moderate any potential social facilitation effects that monitoring may have. Moreover, this hypothesis was based on research involving video observation. It is likely, given the present results, that video and computer monitoring systems are disparate in terms of their effect on performance. This may be for two reasons: (1) for whatever reason, computer monitoring, in this context, may not have been salient enough to affect performance and/or, (2) video monitoring captures aspects of performance most similar to the audience effects described by Zajonc (1965) from which the present hypothesis originally stems. That is, computer monitoring simply does not fit into the social facilitation framework in terms of its effects on performance.

The issue of monitoring hardware and reward implication aside, another reason for the lack of statistically significant monitoring by ability interaction may be due to the fact that the present study may simply not have been long enough to capture the necessary performance information to detect any statistically significant differences between those of differing abilities. That is, the present task was only 30 minutes long which may have been too short a time frame to detect statistically significant differences in key entries between the groups for the various ability levels. In an actual work environment, performance data would be captured in terms of months, not minutes. Thus, an avenue for future research would be to determine if, over much longer periods of time, computer monitoring does influence performance in accordance with the audience effects prescribed by Zajonc (1965).

General Limitations and Future Research

As with any research, there are a number of general limitations to consider. First, the use of undergraduate participants of uncertain motivational state may limit the generalizability of the results. Second, the restricted stimulus set may have made the processing demands easier than would a typical electronically monitored task set. Though every effort was made to create a realistic working environment, the laboratory setting may have been too artificial an environment to create the dynamics normally associated with electronically monitored perceptions and performance.

Nonetheless, the present research does offer some encouraging, conservative findings that may provide new directions in justice, and EPM research. First, the results obtained in this study are, likely, very conservative when compared to those that would be found in an actual working environment. That is, such electronically monitored tasks would typically be associated with longer time frames (e.g., 8 hour shifts, 5 days a week), and greater consequences (e.g., job security, bonuses, actual pay). Thus, findings and effect

sizes obtained here are much more conservative than those that would be captured in actual working environments.

With this in mind, it is clear that such research needs to be replicated in the field. Replication of the present research in a field setting where there are not, necessarily, the same performance guidelines and reward constraints is very important. In such a field setting, there would, likely, be more salient monitoring and, more tangible consequences associated with the EPM system. Such an environment would facilitate more consistent and significant results both in perceptions of fairness and in terms of subsequent voluntary behaviors.

Specifically, future field research could determine whether differences in the invasiveness of EPM systems are associated with different aspects of perceived procedural justice. Is highly invasive monitoring associated with consistently lower ratings of procedural justice or does highly invasive monitoring only predict certain aspects or indices of procedural justice in the field? Moreover, how do such perceptions of fairness translate into OCB in a dynamic work environment? Questions like these could be addressed in the context of either video or computer monitoring to determine if differences in monitoring hardware are associated with different perceptions of procedural justice or behavioral outcomes.

One simple approach in carrying out such research would be to collect ratings of procedural, distributive, and interactional justice in an organization or number of similar organizations using the same type of EPM hardware. Such ratings would be collected at three different times throughout a 6 month period to avoid time-of-measurement confounds. Simultaneously, peer and/or self-reports could be used to collect OCB data. Such an approach would help determine if particular justice ratings predict observable citizenship behavior within the organization.

It would be critical to also reassess the scale used in the present study, as discussed earlier. Specifically, the use of an "no opinion" response option, or changing of the scale anchors for participants in each of the conditions would be useful. This addition may help to clarify any differences between the groups in perceptions of fairness. Also, as discussed previously, this study could also be replicated using different types of monitoring hardware such as a video monitoring system to determine if such systems are associated with differences in perceptions of fairness when compared to that of computer monitored performance.

In addition to scale revisions and EPM hardware comparisons, it would be of valuable theoretical interest to methodologically, rather than statistically, control perceptions of distributive justice. This could be done by holding pay constant across conditions to determine, more clearly, how perceptions of reward fit into the EPM/justice framework. For example, when Brockner and Weisenfeld (1996) reviewed both laboratory and field studies, they found that distributive and procedural justices have an interactive effect when predicting individuals' reactions. Future research could determine if such an interactive effect is the same in the context of EPM.

To do this, either high or low pay, for example, could be linked with either fair or unfair EPM procedures to determine how, if at all, the two aspects of justice interact to predict OCB. Such an approach would simply be a matter of replicating the present study (with the suggested scale revisions) and either holding high or low pay constant across the three monitoring levels. Alternatively, participants in all three conditions might be subjected to the same highly invasive monitoring, but have three highly disparate levels of pay associated with the conditions. That is, replication could assume a procedural, or a distributive condition approach to see if ratings of justice or behavioral measures varies according to the Brockner and Weisenfeld (1996) review of research under conditions of electronically monitored performance.

In summary, the significance of the present research is fourfold: First, the clear and definite description of the monitoring system being used, the performance task, the procedures, as well as the inclusion of a control group all strongly add in overcoming notable shortcomings of past research which, typically, have poorly or incorrectly defined such components (Lund, 1992).

Second, the present research serves to help better articulate and understand how the way in which EPM is used affects perceptions of procedural justice. Moreover, potential scaling problems notwithstanding, it was found that the invasiveness of the monitoring system did not consistently affect justice ratings across the procedural index. Because much of the procedural justice research has been carried out with traditional types of performance appraisal or evaluation, this finding suggests that EPM, unlike other types of performance appraisal systems, is unique in its affect on employee perceptions of justice. Furthermore, the idea that perceptions of privacy are affected by the invasiveness of the monitoring system is of valuable interest.

Third, the present research serves to link two broad areas of research. The idea that citizenship behavior within the organization may be directly affected by EPM systems is not only an interesting, but important issue. This issue is important from not only a theoretical perspective, but a practical one. The present research supports the notion that EPM systems should not be simply installed and "turned on", but need to be a part of a rather complicated and comprehensive system of performance appraisal and pay decisions if important employee behaviors, such as OCB, are to be facilitated. In this sense, EPM research, in terms of employee reactions, should take on the same theoretical and practical importance as the more pervasive areas of traditional types performance evaluation and appraisal.

Last, the present research serves as an avenue for future research in this area. The justice framework is a broad domain that can be well applied to the growing industry of EPM. With over a billion dollars a year being spent on monitoring technology in the U.S.

and Canada, it is critical that the fairness with which such systems are utilized in the workplace be well articulated and understood. As mentioned, how such systems are used has ramifications for both employees perceptions of workplace fairness, but, as well, a potentially broad range of important behavioral outcomes. It is hoped that future researchers will continue to address the issues raised in the present study with an aim to improving how employees are electronically monitored and, ultimately, the quality of worker performance, perceptions of employee fairness, and quality of work-life.

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Appendix A

Informed Consent Form

Consent for Electronic Performance Monitoring Study Participation

Research Project: Electronic Performance Monitoring and Performance Evaluation
Principal Investigators: Wayne Ormond and Dr. Lorne Sulsky
Funding Agency: University of Calgary

This consent form, a copy of which has been given to you, is only part of the process of informed consent. It should give you the basic idea of what the research project is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and understand any accompanying information.

The purpose of our study is to investigate different ways of evaluating performance. Projects like this one are useful for better understanding the implications of different types of performance evaluation. In this case, the usefulness of electronic performance monitoring is of central concern. You have been contacted because you are part of a larger group that will be entering the workforce in the near future (if not already) and who, likely, will encounter electronic performance monitoring at some time during your working career in terms of performance evaluation. The purpose of this form is to provide a description of the present study and to request your consent in participating.

For your part, the study will consist of a **30 minute** data-entry task. Beforehand, you will be given instructions, a short orientation to the task as well as a 5 minute practice period (unpaid). You then will be randomly assigned to one of three performance conditions: **Highly monitored, moderately monitored and unmonitored**.

In the **highly monitored condition**, four patterns of data-entry accuracy will be checked by the computer: errors in spacing, individual character misplacement (i.e., numbers where letters should be or visa versa), incorrect number-range entry (i.e., entering a number that is not in the specified range for that particular answer), and shift errors (i.e., typing in a lower case when an upper case character was specified by the survey information and visa-versa). Participants in this condition will be visually informed (by the computer) of errors on a questionnaire-by-questionnaire basis and prompted to correct the error before continuing on to the next questionnaire.

In the **moderately monitored condition**, only two patterns of data-entry accuracy will be checked by the computer: errors in spacing and incorrect number-range entry (i.e., entering a number that is not in the specified range for that particular answer). Participants in this condition are also subject to the same error notification and correction constraints as those in the highly monitored condition.

In the **unmonitored condition**, four patterns of data-entry accuracy will be checked by the computer (for comparison with the other two groups) but ***participants in this condition will NOT be subject to any error notification or correction constraints,*** as in the other two conditions. That is, you will not be prompted by the computer to correct any of your mistakes. As before, this condition will be used **only** for comparison with the two other groups.

****Regardless of the condition to which you are assigned, you will be paid $0.33 per questionnaire for the total number of questionnaires you are able to completely enter into the computer (see sample questionnaire) to a maximum of 30 questionnaires for a *possible* total of $10.00 (.33 x 30 = $10.00).****

After completing the performance task, you will be provided with feedback regarding your performance by the computer (e.g., number of questionnaires entered, number of errors made) and paid for the number of questionnaires you were able to completely enter. Afterwards, you will be asked to fill out a short questionnaire (approximately 5 min.) regarding your perceptions of the task. The total amount of time required will be approximately 50 minutes. **You are free to discontinue your participation AT ANY POINT, without question.**

Participation in this study will not directly benefit you; nor do we foresee any possibility of harm. In the end, we hope that the information you help provide will aid in developing more effective methods of performance evaluation. If you wish, we will send you a short summary of our study when it is completed; simply let the researcher know at the end of the experiment.

Your identity will be kept completely confidential. You will be assigned a participant number and the key listing your name and participant number will be kept separate from the data in a locked file accessible only to the project supervisor (Wayne Ormond). In the case of publication of the study, your name will not be associated in any way with the published results. At the conclusion of the study, the participant names, numbers and corresponding key will be destroyed.

Your signature on this form indicates that you have understood to your satisfaction the information regarding your participation in the research project and agree to be a participant. In no way does this waive you legal rights nor release the investigators or involved institutions from their legal and professional responsibilities. **Again, you are free to withdraw from the study at any time, for any reason**. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

If you have questions or concerns regarding the research process at any time after your involvement, you may contact either of the project supervisors: Wayne Ormond at 220-5229 or, Dr. Lorne Sulsky at 220-5050.

A copy of this consent form has been given to you to keep for your records and reference.

Thank-you for taking the time to read this.

Date _____ Signature of participant _____

Signature of researcher _____

Appendix B

Justice Questionnaire

Questionnaire

Age ___ __ Male __ Female

Planned Major:

__ Psychology __ Other Year of Program: ___

The following questions are concerned with your feelings of fairness in terms of the decisions made regarding your performance, the procedures used to reach those decisions, and how such information was communicated to you. **Please read the statements carefully** and indicate (by circling) the degree to which you agree or disagree with each statement using the following answer codes:

1 2 3 4 5 6 7
strongly agree neither agree/disagree strongly disagree

1. When I was given my performance feedback, I was allowed the opportunity to rectify information I thought to be incorrect. 1 2 3 4 5 6 7

2. I was rewarded fairly considering the responsibilities/demands of the task.** 1 2 3 4 5 6 7

3. The experimenter provided me with adequate information regarding decisions made about my performance. 1 2 3 4 5 6 7

4. I feel that, ethically, the monitoring of my performance was fair. * 1 2 3 4 5 6 7

5. I was fairly rewarded for the amount of effort I put forth.** 1 2 3 4 5 6 7

6. I feel that the amount of performance monitoring I experienced was unfair.** 1 2 3 4 5 6 7

7. The experimenter collected accurate information in making decisions regarding my performance. 1 2 3 4 5 6 7

8. I was fairly rewarded considering the amount of monitoring I experienced.** 1 2 3 4 5 6 7

9. I feel that the monitoring of my performance invaded my privacy. 1 2 3 4 5 6 7

10. I was treated with respect and courtesy by the experimenter. 1 2 3 4 5 6 7

11. The experimenter made decisions consistent with described procedures. 1 2 3 4 5 6 7

12. The experimenter made her decisions regarding my performance without apparent bias.* 1 2 3 4 5 6 7

13. In terms of the amount of monitoring, I feel that the consistency between groups was fair.* 1 2 3 4 5 6 7

14. The degree to which the electronic monitoring invaded my sense of privacy was unfair.* 1 2 3 4 5 6 7

Additional Comments, if any:

_____

_____

_____

_____

Note: * denotes procedural items included in the final analysis. ** denotes distributive items included in the final analysis. These items are marked for the sake of the reader; such demarcations were not included in the experimental scale.

Experimenter Use Only:

Participant # _____
Condition: _____

Appendix C

Debriefing Form

Debriefing

Thank-you for participating in this study. The information that you have helped to generate in this research project makes a number of important links in both a theoretical and practical sense.

From a theoretical perspective, we were examining if the amount of monitoring you experienced influenced your perceptions of task fairness (your responses on the questionnaire). Until now, this is a question that has been addressed only indirectly in the literature. Moreover, we were also interested in knowing whether your perceptions of the task influenced, in any way, your willingness to participate in upcoming volunteer projects (**please note that you were asked only to record your *willingness* to volunteer and, thus, if you made a volunteer commitment, you will **NOT** be asked to actually volunteer your time) In terms of electronic performance monitoring, this question has not been addressed at all, until now.

Such results are also important from a practical perspective. More and more organizations these days are using electronic equipment (e.g., computers, cameras) to monitor the performance of their employees. As well, many of these same organizations are dependent on the citizenship (i.e., altruistic or helping) behaviors of their employees to ensure the efficient and long-lasting running of the company. What studies like this one show is if there is a link between how electronic monitoring is used and such valued citizenship behaviors. That is, does the way in which electronic monitoring is used within an organization affect the helping and supportive nature of its staff? With so much money being spent on electronic monitoring equipment and procedures (over $1 billion in 1996 alone) and with so many companies relying on the nature of their staff to ensure the prosperous running and longevity of their organization, it is an important question to be answered, indeed.

From both a practical and theoretical perspective, this study also attempts to answer the question of not only how performance is affected by electronic monitoring, but how that performance differs, if at all, across people of different skill levels and across different levels of monitoring. So, from a managerial perspective, the question might be: "If I use electronic monitoring to track the performance of my employees, will their performance really improve?". Moreover, "if performance really does improve, does it improve for everybody?". Also, "if I decide that monitoring is a good idea, what level should I monitor my employees at to ensure that they feel most comfortable while still trying to ensure peak performance?".

Your participation in this study has helped to make these connections in the literature and, as well, has helped organizational psychology draw nearer in answering important questions like those above. We hope that you have enjoyed participating in this important research. If you would like a brief summary of the findings when they are completed, be sure to let the experimenter know and we will be happy to send you a copy. If you have any questions or concerns at all about any aspect of the study and/or your involvement in it, the experimenter would be glad to answer them now. If you have any questions or concerns in the future about this study, please do not hesitate in calling either of the project supervisors: Wayne Ormond at 220-5229 or Dr. Lorne Sulsky at 220-5050.

To be fair to everyone involved in the study, we will also be paying you the full $10.00 potential earnings for this study. Thus, at the end of this debriefing session, you will be asked to return the amount you were already paid and be given, in return, a full $10.00 (unless you already earned that amount). In other words, everyone will leave the study with exactly $10.00. We appreciate your participation.

To aid in the smooth running of the study and to help ensure the accuracy of the findings we ask that you **DO NOT discuss this project nor details of your participation in it with anyone else for the duration of the study*. This is VERY IMPORTANT.**

Again, thank you for your participation.

Appendix D

OCB Description and Record Forms

Volunteers Needed

Volunteers are now being solicited for a data-entry project, at the University of Calgary.

Volunteers are needed for entering data from hard-copy surveys into the computer. **This will be unpaid work.** Also, signing-up may result in being asked to volunteer for the total amount of time recorded. Thus, if you choose to volunteer, you should be committed to doing so. If you do not choose to volunteer, for whatever reason, it will in no way effect your ability to participate in future paid or unpaid projects in the department.

If you choose to volunteer for this project, please sign-up for specific date(s) and time(s). You may sign-up for a **minimum** of **1 hour** (1 block of time) to a **maximum** of **12 hours** (12 blocks). Since the project can accommodate numerous volunteers at one time, you may sign-up for whatever day(s) and time(s) you prefer within the project calendar (i.e., the date(s) and time(s) that best fit your schedule). **Though you will be called to inform you of your schedule, please make note of the date(s) and time(s) you record.**

Once the exact schedule for the project has been determined, an assistant will need to contact you, so include your name and the number where you can most easily be reached (Note: an e-mail address may be used in place of, or in addition to a phone number). If you choose to volunteer, the project coordinator may be contacting you within the next few days. Thank-you for your time and consideration.

Data-Entry: Name(please print):_____

Contact#/e-mail:_____

Check Preferred (max. 12):

Monday, June 1

9-10 a.m. ___ 2-3 p.m. ___
10-11 a.m. ___ 3-4 p.m. ___
11-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___

Tuesday, June 2

9-10 a.m. ___ 2-3 p.m. ___
10-11 a.m. ___ 3-4 p.m. ___
11-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___

Wednesday, June 3

9-10 a.m. ___ 2-3 p.m. ___
10-11 a.m. ___ 3-4 p.m. ___
11-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___

Thursday, June 4

9-10 a.m. ___ 2-3 p.m. ___
10-11 a.m. ___ 3-4 p.m. ___
11-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___

Friday, June 5

9-10 a.m. ___ 2-3 p.m. ___
10-11 a.m. ___ 3-4 p.m. ___
11-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___

Saturday, June 6

9-10 a.m. ___ 2-3 p.m. ___
10-11 a.m. ___ 3-4 p.m. ___
11-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___

Monday, June 8

9-10 a.m. ___ 2-3 p.m. ___
10-11 a.m. ___ 3-4 p.m. ___
11-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___

Tuesday, June 9

9-10 a.m. ___ 2-3 p.m. ___
10-11 a.m. ___ 3-4 p.m. ___
11-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___

Wednesday, June 10

9-10 a.m. ___ 2-3 p.m. ___
10-11 a.m. ___ 3-4 p.m. ___
11-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___

Thursday, June 11

9-10 a.m. ___ 2-3 p.m. ___
10-11 a.m. ___ 3-4 p.m. ___
11-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___

Friday, June 12

9-10 a.m. ___ 2-3 p.m. ___
10-11 a.m. ___ 3-4 p.m. ___
11-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___

Saturday, June 13

9-10 a.m. ___ 2-3 p.m. ___
10-11 a.m. ___ 3-4 p.m. ___
11-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___

Monday, June 15

9-10 a.m. ___ 2-3 p.m. ___
10-11 a.m. ___ 3-4 p.m. ___
11-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___

Tuesday, June 16

9-10 a.m. ___ 2-3 p.m. ___
10-11 a.m. ___ 3-4 p.m. ___
11-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___

Wednesday, June 18

9-10 a.m. ___ 2-3 p.m. ___
10-11 a.m. ___ 3-4 p.m. ___
1-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___

Thursday, June 18

9-10 a.m. ___ 2-3 p.m. ___
10-11 a.m. ___ 3-4 p.m. ___
11-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___

Friday, June 19

9-10 a.m. ___ 2-3 p.m. ___
10-11 a.m. ___ 3-4 p.m. ___
11-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___

Saturday, June 20

9-10 a.m. ___ 2-3 p.m. ___
10-11 a.m. ___ 3-4 p.m. ___
11-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___

Volunteers Needed

Volunteers are needed promote COE at an upcoming local business fair.

Creating Organizational Excellence (COE) is a research unit run by the faculty and students of the Industrial/ Organizational graduate program, here at the University of Calgary. COE has been offered the opportunity to promote itself and provide information on its business at an upcoming local business fair.

At present, potential volunteers are being solicited to distribute COE information/ promotional pamphlets to fairgoers. The fair will be held on or near the University Campus.

This will be unpaid work. Also, signing-up may result in being asked to volunteer for the total amount of time recorded. Thus, if you choose to volunteer, you should be committed to doing so. If you do not choose to volunteer, for whatever reason, it will in no way effect your ability to participate on future paid or unpaid projects for COE.

If you choose to volunteer for this project, please sign up for specific date(s) and time(s). You may sign-up for a **minimum** of **1 hour** (1 block of time) to a **maximum** of **8 hours** (8 blocks). Since the fair can accommodate numerous volunteers at one time, you may sign-up for whatever day(s) and time(s) you prefer within the project calendar (i.e., the date(s) and time(s) that best fit your schedule). Though you will be called to inform you of your schedule, **please make note of the date(s) and time(s) you record.**

Once the schedule for the project has been determined, an coordinator will need to contact you so include your name and the number where you can be reached (Note: an e-mail address may be used in place of, or in addition to a phone number). If you choose to volunteer, a coordinator may be contacting you within the next few days. Thank-you for your time and consideration.

Business Fair: Name (please print): _____

Contact #/e-mail: _____

Check Preferred (max. 8):

Tuesday, June 2

10-11 a.m. ___ 3-4 p.m. ___
11-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___
2-3 p.m. ___ 7-8 p.m. ___

Wednesday, June 3

10-11 a.m. ___ 3-4 p.m. ___
11-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___
2-3 p.m. ___ 7-8 p.m. ___

Thursday, June 4

10-11 a.m. ___ 3-4 p.m. ___
11-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___
2-3 p.m. ___ 7-8 p.m. ___

Friday, June 5

10-11 a.m. ___ 3-4 p.m. ___
11-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___
2-3 p.m. ___ 7-8 p.m. ___

Saturday, June 6

10-11 a.m. ___ 3-4 p.m. ___
11-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___
2-3 p.m. ___ 7-8 p.m. ___

Sunday, June 7

10-11 a.m. ___ 3-4 p.m. ___
11-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___
2-3 p.m. ___ 7-8 p.m. ___

Monday, June 8

10-11 a.m. ___ 3-4 p.m. ___
11-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___
2-3 p.m. ___ 7-8 p.m. ___

Tuesday, June 9

10-11 a.m. ___ 3-4 p.m. ___
11-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___
2-3 p.m. ___ 7-8 p.m. ___

Wednesday, June 10

10-11 a.m. ___ 3-4 p.m. ___
11-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___
2-3 p.m. ___ 7-8 p.m. ___

Thursday, June 11

10-11 a.m. ___ 3-4 p.m. ___
11-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___
2-3 p.m. ___ 7-8 p.m. ___

Friday, June 12

10-11 a.m. ___ 3-4 p.m. ___
11-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___
2-3 p.m. ___ 7-8 p.m. ___

Saturday, June 13

10-11 a.m. ___ 3-4 p.m. ___
11-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___
2-3 p.m. ___ 7-8 p.m. ___

Sunday, June 14

10-11 a.m. ___ 3-4 p.m. ___
11-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___
2-3 p.m. ___ 7-8 p.m. ___

Monday, June 15

10-11 a.m. ___ 3-4 p.m. ___
11-12 a.m. ___ 4-5 p.m. ___
12-1 p.m. ___ 5-6 p.m. ___
1-2 p.m. ___ 6-7 p.m. ___
2-3 p.m. ___ 7-8 p.m. ___

Appendix E

Justice Measure Means, Standard Deviations, and Correlations

Table 1
Means and Standard Deviations by Condition for Individual Justice Measures

	Monitoring Condition					
	High		Moderate		Unmonitored	
Dependent Measure	M	SD	M	SD	M	SD
Djust	2.61	1.20	2.12	1.22	2.50	1.32
Ethicality	2.37	1.73	1.67	0.89	2.66	1.62
Overall Fairness	3.23	1.75	2.43	1.31	2.44	1.44
Bias Suppression	1.72	1.39	1.3	0.65	1.88	1.24
Consistency	3.35	1.80	2.80	1.47	3.58	1.36
Privacy	2.90	1.70	1.93	1.29	2.66	1.52

Note. N = 92. High: n = 30; Moderate: n = 30; Unmonitored: n = 32. Djust = distributive justice. Higher scores indicate less perceived fairness.

Table 2
Correlations Between Justice Measures

Index	1	2	3	4	5	6
1. Djust	--	.43**	.39**	.21*	.34**	.37*
2. Ethicality	--	--	.38**	.34**	.39**	.50**
3. Overall Fairness		--	--	.10	.36**	.57**
4. Bias Suppression			--	--	.18	.02
5. Consistency				--	--	.33**
6. Privacy					--	--

Note. N = 92. Djust = distributive justice
* $p < .05$. ** $p < .01$.

Appendix F

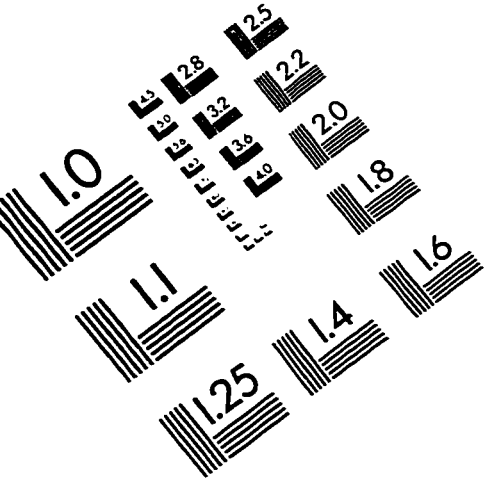
Means and Standard Deviations by Condition for Performance and Ability

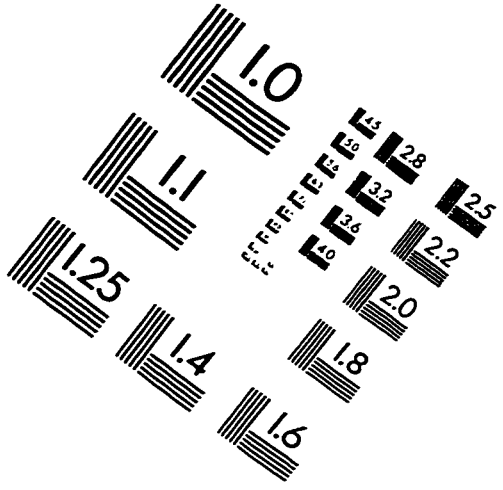
Table 3
Means and Standard Deviations by Condition for Performance and Ability

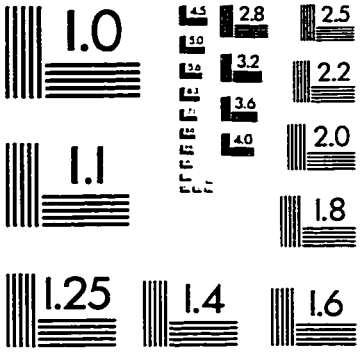
	Monitoring Condition					
	High		Moderate		Unmonitored	
Dependent Measure	M	SD	M	SD	M	SD
Performance	1449.07	628.72	1560.73	553.98	1698.16	525.95
Ability	241.87	93.93	218.73	88.55	219.09	80.09

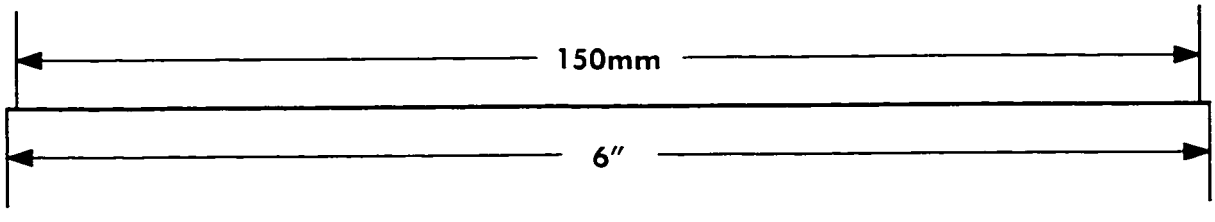
Note. N = 92. High: n = 30; Moderate: n = 30; Unmonitored: n = 32. Higher scores indicate higher ability and performance.

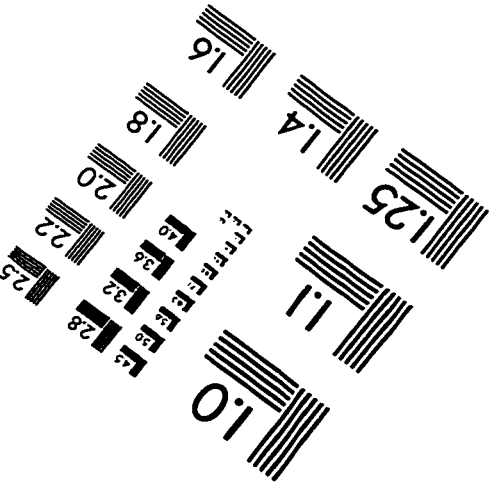
IMAGE EVALUATION
TEST TARGET (QA-3)

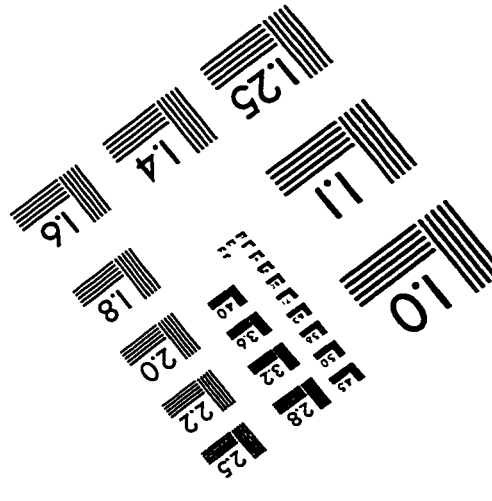












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