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Examining Electronic Surveillance In The Workplace: A Review Of Theoretical Perspectives And Research Findings

Mihaela Vorvoreanu, Carl H. Botan
Center for Education and Research in
Information Assurance and Security
&
Department of Communication, Purdue University
West Lafayette, IN 47907

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Mihaela Vorvoreanu
Carl H. Botan
both of the
Center for Education and Research
in Information Assurance and Security
(CERIAS)
and
Department of Communication
Purdue University

Mihaela Vorvoreanu
mihaela@purdue.edu
http://go.to/mihaela
(765) 496-2772

Carl H. Botan
cbotan@purdue.edu
http://go.to/Botan
(765) 494-3319

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Abstract

Almost three fourths of major U.S. firms admit that they engage in one form or another of electronic surveillance (American Management Association, 2000). At the same time, concern over the negative effects of electronic surveillance is raising. The paradox of electronic surveillance is that it is much used and little understood. This paper is an attempt to facilitate and stimulate research into electronic surveillance. It summarizes up-to-date information on the pervasiveness and the noted effects of electronic surveillance. It proceeds to review academic studies that have focused on this phenomenon and finally, it proposes two other theoretical perspectives that may explain behavior-related effects of electronic surveillance – equity theory, and a communication-oriented approach that focuses on surveillance and responses to it as socially constructed acts of discipline and antidiscipline.

Examining Electronic Surveillance In The Workplace:

A Review Of Theoretical Perspectives And Research Findings

Introduction

As long as there has been employment, employees have been monitored (Nebeker & Tatum, 1993). In recent years, however, due in part to new technology that makes it easier, there has been an explosion of electronic monitoring and surveillance in the American workplace (Botan, 1996).

This paper is concerned with workplace surveillance, as opposed to general workplace monitoring. More specifically, it attempts to provide an overview of literature focusing on electronic surveillance, its characteristics and effects. The assumption behind this effort is that awareness of the workplace issues related to electronic surveillance, of some studies that have looked into this matter in a systematic fashion, and of the theoretical perspectives undergirding them, can provide a basis for discussion and further inquiry.

The paradox of electronic surveillance is that it is much used and little understood. As one manager put it, referring to electronic surveillance: "We need an understanding of how to manage an automated environment. I don't think we understand the effects of certain things on employees…" (Chalykoff & Kochan, 1989). This paper seeks to facilitate an understanding of existing research on electronic surveillance and thus future attempts at deepening this understanding. It begins by providing an overview of the situation of electronic surveillance in the U.S. workplace. The first part presents statistics about the frequency and types of surveillance, discusses the types of jobs most likely to be surveilled, and reviews negative effects of electronic surveillance As will be seen, the threat of these negative effects, coupled with the pervasiveness of electronic surveillance in the North American

society, constitutes a strong reason for careful examination of electronic surveillance and its consequences. An understanding of existing research on electronic surveillance is necessary to make this examination possible. Therefore, the second section of the paper reviews a number of academic studies that address electronic surveillance from varying points of view. Some of these research findings, as well as anecdotal evidence, suggest that, in addition to stress and lack of workplace privacy, electronic surveillance can contribute to negative employee behaviors. These behaviors can have a significant effect on life in organizations and on the corporate bottom line. This is why it is important to be able to understand and explain them in relation to electronic surveillance. The third part of the paper proposes two theoretical perspectives that can be used to explain the occurrence of these behaviors. The first perspective, borrowed from social psychology, is Equity Theory. Equity Theory provides a useful framework for explaining behaviors in a social exchange as a balance of inputs and outputs. The second perspective is a communication-oriented approach, in that it assumes that communication has an essential role in the emergence of discipline and resistance practices and their meanings in the workplace. It is a more critical approach that looks at surveillance as a form of discipline, and at resistance to surveillance, as a form of antidiscipline (de Certeau, 1984). Finally, a number of concerns are expressed, as electronic surveillance is interpreted in the larger context of life in organizations and in democracy.

Electronic Surveillance in the Workplace: An Overview

During the past two decades, workplace surveillance has been steadily on the rise (Aiello, 1993; Aiello & Svec, 1993; Botan, 1996; Botan & Vorvoreanu, 2000), and its frequency is still increasing. A recent study by the American Management Association (AMA, 2000) found that 78.4% of major U.S. firms had engaged in some form of electronic surveillance over the past year. That

number was up from 67% a year before. This increase is due, in part, to rapid advances in technology. In earlier times, surveillance was limited to the information that a supervisor could observe and record firsthand and to primitive counting devices. In the computer age, surveillance can be instantaneous and constant.

While almost all jobs have potential to be subject to some type of surveillance, some are much more susceptible to the activity. These can range from the office worker whose supervisor reads her e-mail messages to the grocery store cashier whose bar code scanner records the speed at which he is working. The next section provides an account of the types of jobs most likely to be under electronic surveillance.

Who Is Surveilled

According to several studies in the late 1980's (e.g. U.S. Congress, 1987), the jobs that are particularly susceptible to being surveilled include data processing, word processing, and customer service telephone operators. These tasks are especially easy to surveil because they are all linked to computers and they all produce results that can be quantitatively measured. For instance, it is possible for a supervisor in a phone bank to count the number of calls that all workers answer and to rank the performance of each worker based on these numbers.

These studies also suggest that surveillance affects men and women differently. Most of the jobs that are surveilled are in the clerical fields and lower levels of the professional fields, i.e. routine computer programming, and these fields typically employ a much higher proportion of women than men. Minority women have an even greater representation in these types of positions. (U.S. Congress, 1987). It follows that women, and particularly minority women, are surveilled at much higher levels than men. There has never been accurate documentation of the extent of these differences, but estimates of

the proportion of surveilled employees that are women range from 75% to 85% (c.f., Botan, 1996). These numbers do, however, seem to be evening out with the advances in technology that make surveillance within such male dominated fields as over-the-road truck driving possible. Many forms of electronic surveillance have evolved to address such a breadth of activities, some of which are listed in the following section, accompanied by information regarding their frequency.

Forms of Electronic Surveillance

Workplace surveillance can take many forms. Of those firms that admitted to surveilling employees in the AMA study (2000) mentioned above, almost half said they monitored employee phone calls, either by recording information about calls made (44%) or by actually listening to the calls themselves (11.5%); thirty eight percent stored and reviewed electronic mail and 6.8% voice mail messages of employees. A large percent monitored employees' computers, either by recording computer use (timed logged on, number of key strokes, time between entries, etc. – 19.4%), by storing and reviewing employees' computer files (30.8%), or by monitoring Internet connections (54.1%); almost fifteen percent admitted to videotaping employee job performance and 35.3% to videotaping for security purposes. Of these numbers, all but video surveillance were up from the 1999 results.

These are not the only kinds of surveillance practiced in the workplace today, as suggested by the frequent mentions other types of surveillance in the popular press. These include such closely related practices as genetic and HIV testing (Sayre, 1996), using computer programs to view what is on an employees computer screen at any given moment (Tanaka & Gajilan, 1997), and even investigating employees' credit ratings (Quinn, 1997). Some of these surveillance techniques, such as genetic testing, do not necessarily qualify as electronic surveillance, but they should be a cause of concern because of their potential for producing panoptic effects (Botan & Vorvoreanu, 2000) by strengthening the control

that corporations hold over their employees. Control is only one of the reasons why managers choose to use electronic surveillance. Other reasons, mentioned in the AMA (2000) study and in other reports, are reviewed below.

Uses of Electronic Surveillance

There have been several reasons suggested for the predominance of surveillance. One suggestion is the simple fact that the possibility exists. For the first time such extensive surveillance is possible because new technology makes it easy to use and relatively inexpensive to install (Hardin, 1999; Hartman, 1998; Howard, 1998; Palmer, 1998), so that those with the desire to surveil can indulge it more easily than ever before.

There are, of course, many other reasons for instituting surveillance. According to the survey by the American Management Association (2000) the top four reported reasons for using surveillance were to acquire information for performance reviews, guarantee legal compliance, for legal liability, and cost control. Other commonly cited justifications included protection of business information, security, and safety (Daugherty, 1999; Howard, 1998; Richard, 1999).

The growth of new surveillance technology and practices has increased the potential for negative effects on the people subjected to it. If the negative effects of electronic surveillance spread at the same rate as the practice itself, it is important that decision makers be aware of and understand them. The next section reviews literature that documents some of the negative effects that electronic surveillance can have on employees.

Effects of Electronic Surveillance

The observed effects of workplace surveillance have made it an issue of concern in the popular press (Aiello, 1993), who have taken to sensationalizing it with article titles such as "Big Brother At

Work," "Bosses Doing More Than Looking Over Workers' Shoulders", and "The Boss Never Blinks." Many of these articles take an inflammatory approach to the subject, portraying a workplace environment that falls just short of Orwell's *1984*. Numerous general interest magazine articles, within a range that varies from business to women's magazines, give voice to concerns over electronic surveillance (Clavin, 1995; Frankel, 1996; Goldwasser, 1994; Howard, 1998; Jossi, 1994; Lewis, 1999; McNatt, 1999; Palmer, 1998; Prince, 1996a, 1996b; Richard, 1999, Smith & Williams-Harold, 1999). Such articles suggest an overall dissatisfaction with the lack of privacy rights in the workplace and consistent language choices reflect a negative attitude towards electronic surveillance. Associated with the topic are words and expressions such as: *spying*, *snooping*, *electronic spying*, *sneaking*, *espionage*, *prying*, and *Big Brother*.

The management literature notes a number of cases of companies being sued for invading employee privacy through the use of electronic surveillance equipment (Alderman & Kennedy, 1996; Balitis, 1998). These suits have increased awareness of the legal risks associated with using electronic devices to monitor employees. But detrimental effects of electronic surveillance are not restricted to legal risks. A concern with employee relations and employee morale being negatively affected was also noted (Balitis, 1998; Fitting, 1995). In turn, poor employee relations and low morale have an influence on the corporate bottom line, which might ultimately defeat one of the primary goals of electronic surveillance, productivity increase. Moreover, the scholarly literature reports studies that show an adverse effect of electronic surveillance on variables closely related to productivity, such as job satisfaction, turnover and absenteeism (Chalykoff & Kochan, 1989; Kidwell & Bennett, 1994; Mishra & Crampton, 1998) and even productivity itself (Ottensmeyer & Heroux, 1991). Botan (1996), in a study that compared employees who considered themselves to be heavily surveilled to their less

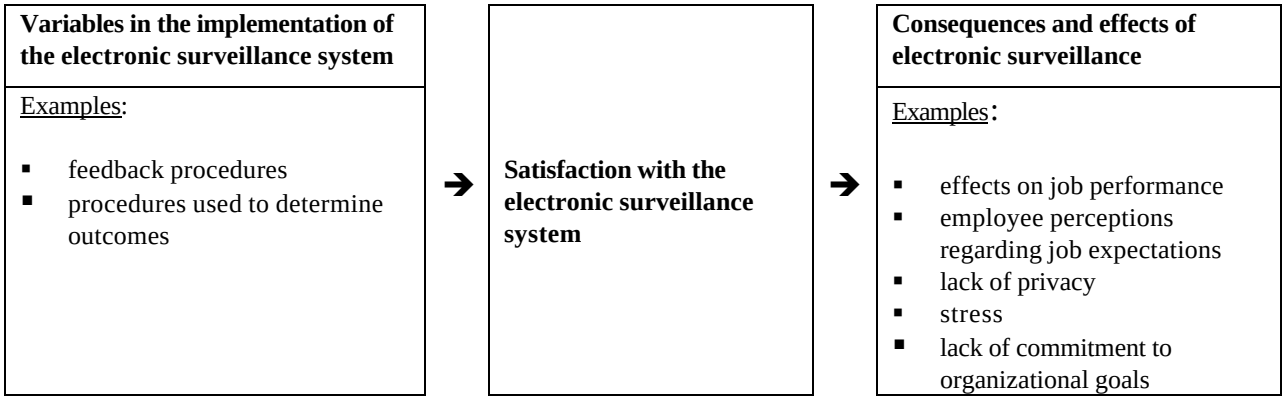
surveilled counterparts, also found significant negative or "panoptic" effects. Even proponents of electronic surveillance advise management to consider negative stress-related and health effects caused by monitoring (Posch, 1993). Last but not least, increasing concern with ethical considerations of privacy, fairness and respect for employees is manifested in the professional literature (Hartman, 1998; Mishra & Crampton, 1998; Ottensmeyer & Heroux, 1991).

As the literature suggests, negative effects of electronic surveillance are a cause of concern. This concern has motivated a number of researchers to study electronic surveillance and its consequences in a systematic fashion. The next part of the paper reviews some of these studies and their theoretical assumptions and findings in more detail.

Empirical Studies of Electronic Surveillance

Although most studies of electronic surveillance share a focus on the effects of electronic surveillance, they take various approaches and are informed by different theoretical perspectives. Based on these studies, three main foci of electronic surveillance research can be identified. They are illustrated below, in Figure 1, according to the hypothesized causal relationships between them:

Figure 1: Foci of electronic surveillance research



Chalykoff and Kochan (1989) and Kidwell and Bennett (1994), focus primarily on the effects of antecedent variables on satisfaction with the electronic surveillance system, or the first two squares in Figure 1. Most other studies tend to focus on the right-hand part of the figure. Aiello and Svec (1993), Griffith (1993) and Nebeker and Tatum focus on job performance as affected by electronic monitoring. Aiello and Svec (1993), and Griffith (1993) attempt to test and explain the effects of computer monitoring on job performance using the social facilitation framework (Zajonc, 1965). Nebeker & Tatum's (1993) study is informed by theories such as goal setting, incentives and office automation. Grant et al. (1988) study employee perceptions, as affected by electronic surveillance. In a perspective similar to the meta-communication argument raised by the authors elsewhere (Botan & Vorvoreanu, 2000), they inquire whether computer monitoring leads to perceptions that work quantity is more important than quality in the customer service sector. But a coherent theoretical framework that has electronic surveillance at its center guides none of these research efforts.

Botan and McCreadie (1990) develop the beginnings of such a framework for predicting unintended negative, or panoptic, effects of electronic surveillance. Botan (1996) employs this model in a study focusing on the effects of the perception of being under electronic surveillance on privacy, uncertainty, self-esteem and workplace communication and it is used in another paper on this panel (Botan & Vorvoreanu, 2000) that reports on other negative effects.

The remainder of this section reviews these studies in more detail. The discussion begins with antecedent variables of satisfaction with electronic surveillance, and proceeds towards effects of surveillance, ending with a model that encompasses these effects.

Satisfaction With Electronic Surveillance Systems

as a Mediator of Job Satisfaction and Turnover.

Chalykoff and Kochan (1989) develop a model for examining the impact of monitoring on employee-level job satisfaction and turnover propensity. In the first stage of the research, they conducted 91 interviews with employees, supervisors, and managers in a department of the United States Internal Revenue Service. These interviews suggested that computer monitoring is a central activity in the offices that were studied, and that both managers and employees acknowledge the need for monitoring. The second, but very important, conclusion was that employee attitudes toward monitoring depend largely on the characteristics of the performance-monitoring feedback process. Thirdly, it was found that monitoring has potential for control or feedback, and that the difference lays in the way the system is put to use.

Based on the information collected in the interviews, Chalykoff and Kochan (1989) developed a conceptual model that illustrates the mediating influence of satisfaction and the monitoring system on job satisfaction and turnover propensity. The first stage of the model contains three groups of variables that determine satisfaction with the computer monitoring system. The variables in the first group are related to feedback and performance appraisal factors and include immediacy, frequency, sign of feedback, clarity of rating criteria, and other factors of the employee-supervisor relationship. The variables in the second group tap into attitudes concerning the appropriateness of monitoring, such as perceiving an invasion of privacy or seeing surveillance as a necessary tool, etc. Finally, the third group is comprised of additional factors that are likely to influence turnover, such as job stress, alternatives for employment, and pay grade. These variables are hypothesized to influence satisfaction with computer monitoring, which in turn is assumed to be a predictor of job satisfaction and turnover propensity. In

order to test this model, the authors used a survey instrument to collect data from IRS employees. The results, based on 740 returned questionnaires, supported the general argument although, consistent with the small explained variances predicted by Botan (1996), satisfaction with the monitoring system had only an indirect effect on turnover propensity. The major conclusion of this research effort is that the way the system is used makes a big difference in employee attitudes towards computer monitoring.

Kidwell and Bennett (1994) build on Chalykoff and Kochan's (1989) study and introduce a new mediating variable in the model. They hypothesize that employees' affective reaction to an electronic surveillance system is mediated by perceptions of procedural fairness. Perceived procedural fairness is the perceived fairness of the method used to establish outcomes (such as raises and promotions). The hypothesis is appropriate because electronic surveillance systems are often used for evaluating job performance and deciding outcomes. The researchers used survey methods to measure the same antecedent variables as Chalykoff and Kochan (1989) in the first stage of the model, procedural fairness in the second stage and computer-monitoring satisfaction and job satisfaction in the last two stages. The research findings suggested that: (1) employee perception of procedural fairness is an important antecedent of attitudinal responses to the use of electronic technologies to monitor employee performance; (2) employees' opinions about the fairness of the evaluation system are influenced by factors such as consistency of the system across individuals and in time, potential bias of the system, accuracy of information obtained, flexibility of the system on correcting mistakes, compatibility of the system with employee ethical values, and the voice employees have in setting up the system.

The studies reviewed so far are important because, unlike most of the research about electronic surveillance, they focus on those characteristics of the electronic surveillance system that have an

influence on employee attitudes. The results of these studies can be useful for managers who are interested in using electronic surveillance and avoiding some of its negative effects.

The extent to which these studies address the effects on other organizational variables of low satisfaction with surveillance is quite limited. The only variables that are taken into consideration are job satisfaction and turnover propensity. Although these are very important, other evidence suggests that the effects of electronic surveillance may be more complex than is envisioned in these studies. The studies that are reviewed next address an increasing number of negative effects of electronic surveillance, starting with job performance.

Effects of Computer Monitoring on Job Performance

Two main studies stemming from social psychology focus on the effects of computer monitoring on job performance (Aiello & Svec, 1993; Griffith, 1993). They both use the Social Facilitation Framework (Zajonc, 1965) to explain the effects of electronic monitoring on job performance on simple and complex tasks. Social facilitation explains performance differences based on whether an individual works alone or in the presence of another person. The basic thesis of social facilitation is that another's presence increases probability that an individual will respond to a task with the individual's dominant response, which usually is correct in the case of simple tasks and incorrect in the case of complex ones. In other words, the presence of another is hypothesized to increase performance on simple tasks and decrease performance on complex ones (Zajonc, 1965, cited in Griffith, 1993).

Griffith (1993) uses a controlled experimental setting to compare the effects of computer monitoring with those of in person supervision, on the performance of a simple task. Although job performance of the computer monitored workers was greater than that of subjects exposed to in person supervision, which in turn exceeded the performance of those who worked alone, the results were not

statistically significant. For complex tasks, however, Aiello and Svec (1993) found a social facilitation effect. That is, computer monitoring was found to be similar to the presence of a supervisor and to negatively affect performance of difficult tasks. The results prompted the authors to conclude that if a job involves performing difficult tasks, it is more efficient not to have computer monitoring. However, none of these studies found significant differences in job satisfaction and anxiety between monitored and non-monitored groups of subjects. These findings are further interpreted below.

Also adopting a socio-psychological background, Nebeker and Tatum (1993) conducted two elaborate laboratory experiments to investigate the effects of computer monitoring, under different conditions of standards and rewards, on productivity, work quality, satisfaction and stress. Their research hypotheses were informed by Goal Setting Theory and by incentives and office automation theories. Results were consistent with these theories and did not show any significant negative effects of computer monitoring. These results, as well as the findings of Aiello and Svec (1993) and Griffith (1993) can be explained by the fact that in all experimental settings, the researchers studied in fact monitoring, as opposed to surveillance (e.g., Botan, 1996). The control/punitive dimension usually associated with electronic surveillance in the real workplace was absent from these experimental settings. The studies isolated computer monitoring from other factors that might transform it into surveillance. In a real work setting, there is much more at stake, and this could increase the stress and other reported negative effects of electronic surveillance. The experimental studies discussed above did not attempt to establish the relationship of authority and control that is associated with electronic surveillance in the workplace and that Botan (1996), for example, discusses.

These studies also ignore the view that electronic surveillance, like any other organizational practice, is socially constructed, and its meaning may extend far beyond the counting of key strokes.

Various discourses and interests interact in organizational settings, shaping the reality of being under electronic surveillance and influencing the extent to which the experience is negative. None of these issues is accounted for in the experimental settings discussed here. The studies reviewed next, however, have a different orientation and acknowledge the importance of subjectivity and perceptions.

Effects of Electronic Surveillance on Employee Perceptions of Management Expectations

Grant, Higgins and Irving (1988) take a different approach to electronic surveillance and focus on employee perceptions. Their main question is whether, due to the nature of the information it collects, computer monitoring leads to a perception (e.g., meta-communicates) that work quantity is more important than quality. They examine the consequences of such a perception in the customer service sector. Grant et al.'s (1988) research effort is based on a model that emphasizes the role of perceived employer expectations, along with other variables such as perceived job characteristics, personal characteristics, or motivation to perform the job. The perception of employer expectation is given particular importance, because "employees tend to direct efforts at the tasks stressed or rewarded by the employer" (Grant et al. 1988, p. 40). With computer monitoring, the employer's message regarding expectations is not always clear, because such systems collect information primarily on quantitative aspects of the work. Thus, employees might perceive that quantity is more important than quality of service. Grant et al. (1988) investigated this question through a series of interviews with employees at an insurance company. They found that workers who were subject to computer monitoring perceived that work quantity was more important than quality and that they were expected to handle a greater number of claims rather than provide quality service to customers. As compared to non-monitored insurance workers, the ones under surveillance reported a decrease in quality of service and a tendency to avoid

dealing with more difficult, time-consuming claims. Some employees described how they routinely bypass standard procedures and "fool" the computerized system into counting more telephone calls.

As opposed to the research efforts reviewed so far, that import theories from other fields into the study of electronic surveillance, Botan (Botan & McCreadie, 1990, Botan 1996) attempted to develop a theoretical framework to explain and predict the effects of electronic surveillance.

The Electronic Panopticon

Botan (1996) started with the metaphor of the panopticon to describe the type of relationship that electronic surveillance creates in the workplace. Like in the physical structure of Bentham's panopticon (Foucault, 1977), the inhabitants of the electronic panopticon are always visible and subject to the surveilling gaze of an authority, which is always out of sight. They are unable to know when they are being observed and when they are not. The electronic workplace and the panopticon have another common characteristic, the communicative isolation of occupants. In the case of the electronically controlled workplace, the isolation may not be physical in nature. People sitting next to each other focusing on their own computer terminal, working on an individual task that is individually timed and monitored, are just as isolated as the prisoners of the panopticon. Even if they have the physical capability to communicate, they cannot risk engaging in a type of behavior that is not part of their job. The contrast between the visible and the invisible creates a special type of power relationship (panoptic relation), in which employees are vulnerable and they have no choice but to act as if they were being observed all the time.

Botan (1996) also used Social Power Theory to suggest that when information technology is used as a tool for enforcing a particular type of power relationship the consequences are not always as intended. Starting from this theoretical framework, Botan used perception of being surveilled as an

independent variable that can predict panoptic effects such as a reduced sense of privacy, increased uncertainty, and reduced workplace communication, all of which were found to be significant in a statewide sample of information workers in New Jersey. Although Botan only reports data on these three panoptic effects, others are hypothesized. In fact, the electronic panopticon model allows for the inclusion of a potentially unlimited number of negative effects that remain to be documented.

The major limitation of this and other electronic surveillance research is that it has not yet provided convincing evidence that electronic surveillance has substantial negative effects that might outweigh its benefits. This criticism is particularly valid in the face of Botan's small explained variances. The next section of the paper suggests two more theoretical perspectives that can be used to further build that argument, however. Both perspectives help explain what most people would define as undesirable employee behaviors that may occur in response to electronic surveillance. The first perspective, stemming from organizational psychology, is Equity Theory. The second one is more communication-oriented, and focuses on surveillance and responses to it as socially constructed acts of discipline and antidiscipline (de Certeau, 1984).

Explaining Undesired Employee Behaviors in Response to Electronic Surveillance: Two Theoretical Perspectives

As noted above, stress and privacy invasion are not the only likely effects of electronic surveillance. Other consequences, often expressed through employee behavior, are likely. This might include decreased work quality (Grant et al., 1988), and productivity (Ottensmeyer & Heroux, 1991). Botan (1996) and Botan and Vorvoreanu (2000) distinguish between two categories of panoptic effects. The first is internal effects, such as stress, uncertainty, a sense of vulnerability, or lack of privacy. The second is external, or behavioral. This second category of effects is of particular importance

because they are probably common, are susceptible to misinterpretation, and can cost the organization a lot of money. Equity theory, and theories of resistance, provide one framework for studying and understanding such behavioral effects. These two theoretical perspectives, and their potential application to the study of electronic surveillance, are discussed below. The discussion begins with equity theory and progresses with resistance, a communication-oriented approach.

Equity Theory

Equity theory was proposed in 1965 with the purpose of specifying the "antecedents and consequences of injustice in human exchanges" (Adams, 1695, p. 268). In equity theory terms, the participants in a social exchange, such as the employer-employee relationship, invest *inputs* and obtain *outputs*. There always is a risk that the exchange be perceived as inequitable, if the person involved considers that an Other's ratio of inputs to outcomes is more favorable than his or her own. The "Other" can be the other party to the exchange, or a similar person involved in a similar exchange with the same third party. If the Other is in an exchange relationship with the subject (referred to as "Person"), then Person's inputs represent Other's outputs and vice versa. Typically, Person can be thought of as an employee and Other as management. According to Adams (1965), perceived inequity in a social exchange creates psychological tension that acts as a drive. Person is motivated to reduce this tension by reducing inequity. Person can do this by reducing the only thing she or he has control over - inputs. Altering Person's inputs leads to a more balanced inputs-outputs ratio by reducing Other's outcomes to be more consistent with Person's.

Person and Other can be in either a direct or indirect exchange relationship. A direct exchange relationship is established in which Person provides inputs such as labor, commitment, or loyalty to obtain outputs, such as pay, prestige, or other rewards. Person and Other establish an exchange

relationship that both, presumably, accept as equitable or they would not enter into it. An indirect exchange exists when both Person and Other are in a relationship with a third party, such as when Person sees Others who make the same presumed contributions receiving more outputs than her or himself whether in the form of more pay, a bigger office, or personal complements from supervisors. It is sometimes tempting to classify such responses to the rewards of others as simple jealousy, but this is demeaning to such employees and probably too simplistic because it ascribes an irrational and immature motive to behaviors that equity theory suggests may be highly rational and based on the same values upon which the original relationship was negotiated.

Surveillance can unbalance both direct and indirect exchanges. Because of the extra power and control managers have over employees when a program of surveillance is instituted, for example, employees are likely to perceive that such surveillance alters the exchange relationship in the favor of management. As a result, Equity Theory suggests, employees might feel motivated to reduce inputs or to find some way – approved or not – to increase the outputs they acquire. Spending more work time surfing entertainment and pornography sites on the Internet might be examples of such unilateral rebalancing of the relationship. Or, an employee who believes they do the same amount and quality of work as another, but is surveilled while Other is not, would feel that Other is getting better/more outputs than him or herself and be psychologically driven to rebalance the relationship, possibly by finding a way to "beat" the surveillance.

Other does not always have to be a different person, however. Other can be Person in some previous condition, so that the employee sees her or himself in an inequitable relationship when comparing the current treatment with some previous condition. For example, consider the situation of an employee who has worked with the same company both before and after an electronic surveillance

system is implemented. When comparing the present to the past situations, this employee is likely to perceive that her or his outputs have remained the same while inputs have increased since he or she is more tired at the end of the day because they have been under added stress due to the surveillance. In this case, Person/employee perceives that the present situation is inequitable due to any of several panoptic effects (e.g., lost privacy, increased stress, or distrust) and feels motivated to reduce this inequity. Equity Theory predicts that employees will usually do so by reducing inputs. That is, the work performed for the company.

In cases where electronic surveillance keeps track of the quantity of work done, Person may not be able to alter quantity of inputs. Equity theory suggests that employees might, instead, alter the quality of their work. This is why it is particularly important for managers to avoid imposing quantitative surveillance programs on top of quality improvement programs without thoroughly analyzing the potential effects such surveillance can have on quality.

Equity Theory explains a reduction of work quantity or quality as an attempt at rebalancing the exchange. However, there are other behaviors, such as acts of sabotage that cannot be so readily explained as a reduction of employee inputs. Resistance provides a theoretical perspective appropriate for explaining this kind of behaviors.

Resistance, Discipline and Antidiscipline

Electronic surveillance can be seen as a form of discipline. The concept of discipline adopted here is consistent with Foucault's (1977) view of a grid of practices that attempt to 'normalize,' regulate and exert control over our lives. Resistance to electronic surveillance can then be seen as "antidiscipline" (to borrow a term used by de Certeau, 1984), comprised of a multitude of micro-practices that subvert the functioning of the dominant disciplinary system. These practices can take many forms, such as

computer or other types of sabotage (Gottfried, 1994; Gottfried & Fasenfest, 1984; LaNuez & Jermier, 1994), stories (Ewick & Silbey, 1995), and even humor (Collinson, 1988).

LaNuez and Jermier (1994) discuss sabotage as a type of resistance in the workplace. They conceptualize sabotage as a kind of antidiscipline because they see it as "deliberate action or inaction that is intended to damage, destroy, or disrupt some aspect of the workplace environment, including the organization's property, product, processes or reputation, with the net effect of undermining goals of capital elites" (p. 221). The authors review literature from psychology and point to two major motives behind acts of sabotage - diminished control and negative affect. They also review a number of blue-collar worker studies and list some of the conditions in which sabotage acts seem to occur. Sabotage is more frequent when work is routine, monotonous, tedious, and/or physically dangerous.

LaNuez and Jermier (1994) go on to specifically mention electronic control systems as a source of diminished control that can lead to sabotage. This is likely to be true, to the extent that the two major motives behind workplace sabotage, as well as the conditions in which it occurs, are present in the electronically surveilled workplace. Diminished employee control, the first cited motive, is a direct consequence of continuous surveillance while negative affect is often also mentioned as a consequence of electronic surveillance (c.f., Botan & Vorvoreanu, 2000, Tables 1 and 2). Moreover, many of the tasks that lend themselves to electronic surveillance are routine and monotonous (i.e. information work, involving the entering, storing, processing and maintaining information; service work), so the conditions in which sabotage acts seem to occur are also likely to be present when electronically surveilled is. With the necessary conditions and the motives both present, employee behaviors that oppose organizational goals, and are labeled as 'negative' in the literature, are predictable and are not "abnormal" as far as the literature is concerned.

From a theoretical point of view, negative behaviors as responses to electronic surveillance are explained by the concept of resistance. According to Foucault, there is a tight link between power and resistance, because they are 'productive' of one another (Foucault, 1988, cited in Knights and Vurdubakis, 1994). The exercise of power implies the existence of a certain degree of free will on the side of the party toward which power is targeted. It also implies a degree of coercion, since total agreement makes the exercise of power unnecessary. In other words, the target has a degree of free (and differing) will that can be mobilized as resistance. Resistance itself is power, but acting in a different (opposite) direction. As Knights and Vurdubakis (1994) explain,

> Why should 'powers' be coordinated and consistent with one another in producing their effects and why should the manifestation of tensions, contradictions, or noncorrespondences within power relations be excluded a priori? Power relations may compete, contradict as well as reinforce one another. (p. 178)

So the possibility that electronic surveillance will be met by resistance in the workplace should come as no surprise. In fact, some of the negative effects of electronic surveillance discussed above can best be interpreted as acts of resistance.

A second set of theoretical assumptions undergirding this approach to electronic surveillance concerns the view of communication technology (and thus surveillance systems). Traditionally, communication technology has been viewed as a physical, material artifact with an objective presence, and easily identifiable and quantifiable effects. This position is opposed by a subjective, social constructionist view of communication technology, which holds that technology is constituted by the way it is perceived, and that the social context plays a fundamental role in the construction of this perception

(Fulk, 1993; Jackson, 1996). Others (Coombs, Knights & Willmott, 1992; Jackson 1996) propose a perspective on communication technology situated between the objectivist and the subjectivist extremes.

Jackson (1996), for example, argues for an integrated definition of communication technology grounded in the functional aspect of the technological artifact. According to this view, this artifact is composed of social as well as material elements and is constituted as technology insofar as it is perceived as a social tool and has the physical ability to perform the task (Jackson, 1996).

Coombs et al. (1992) adopt a similar view of communication technology as constituted by both social and material elements. They propose three social phenomena that condition the orientations and interpretations through which individuals relate to technology. These social phenomena are culture, control and competition. More specifically, the meanings and interpretations of communication technologies and their uses are mediated through culture. The authors adopt Smircich's (1993) view of culture as "root metaphor," essentially constitutive of organizations. The introduction and use of communication technologies is interpreted in the competitive context of organizational life to enhance control over processes of production (often in unanticipated ways). In turn, the content of culture and the operation of control are to be interpreted in the context of the competitive pressures in which they function.

This latter view of communication technologies seems particularly appropriate for the study of electronic surveillance. Although there are certain factors of electronic surveillance that remain constant across contexts, the specific meanings and interpretations are mediated through the cultures in which electronic surveillance takes place. As Jackson (1996) put it, technology and its context are inseparable, they are in an interdependent relation in which one gets continually influenced (and thus created) by the other. The experience of being surveilled acquires meaning as it is lived and interpreted by people in

their organizational contexts. Depending on the nature of this social construction, electronic surveillance can be perceived as a more or less negative experience, and can have varying effects. Therefore, surveillance as a form of discipline, and resistance, as a form of antidiscipline, may differ from one social context to another, and even from one individual to another, depending on various influences such as culture, workplace environment, personality, etc.

This view suggests that different research methods are needed in order to capture the complexity of the experience of working under electronic surveillance. Qualitative research methods such as in-depth interviews and ethnography seem to well suited for this task. Furthermore, this approach suggests that caution is necessary when generalizing conclusions about the nature and the effects of electronic surveillance beyond a local level. The advantage, however, rests in the accuracy and the depth of the understanding that may result from a research study based on the assumptions presented here.

Conclusion

This paper has sought to provide an overview of electronic surveillance. It has summarized data regarding the pervasiveness of electronic surveillance in the U.S. workplace, the types of jobs most likely to be surveilled, the methods used for electronic surveillance, and the unintended negative effects that may result. It has also reviewed a number of important studies that have looked into the nature and effects of electronic surveillance. The research findings, as well as other evidence, suggest that the negative effects of electronic surveillance are an issue of consequence for society. However, the existing research is not sufficient, for several reasons. First, it still hasn't provided undisputable evidence regarding the effects of electronic surveillance. Second, the phenomenon remains under-theorized. In an attempt to stimulate further study of this topic, two theoretical perspectives were suggested, that have

the capacity to help explain undesired behavioral responses to electronic surveillance. Hopefully, future research will build on these, or other, theoretical perspectives and will be more successful in helping to understand the consequences electronic surveillance can have.

A final issue related to workplace surveillance that should not be disregarded is employee voice. Deetz (1992) has raised the concern that, although corporate America is the site of decision making for an increasing number of issues that affect our lives, the decision-making process is not a democratic one. The consequence is that an increasing number of decisions about our lives are made in a non-democratic manner. The decision to implement electronic surveillance often does not consider the voice of those surveilled. There are significant ethical issues related to electronic surveillance that still need to be explored and, therefore, a great need for increased "voice" from those of us who are surveilled.

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