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ELECTRONIC MONITORING AND SURVEILLANCE IN THE WORKPLACE: MODELING THE PANOPTIC EFFECT POTENTIAL OF COMMUNICATION TECHNOLOGY, ORGANIZATIONAL FACTORS AND POLICIES

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ELECTRONIC MONITORING AND SURVEILLANCE IN THE WORKPLACE:

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by

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Dedication

To my parents, Andrew and Katherine D'Urso

and

Brother Joseph M. Walsh, F.S.C., Ph.D.

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In the post-September 11th world, issues of privacy and surveillance have come to the front of concerns among the citizens of this nation. With the USA PATRIOT Act now in place, many are concerned about the effects it will have on the general population, in addition to the terrorist organizations it is intended to thwart. It has also brought more attention to the practice of organizational surveillance of employees, which occurs in nearly 80% of organizations.

This dissertation project examines the panoptic effects of electronic monitoring and surveillance (EM/S) of social communication in the workplace, and the underlying elements that lead to these effects. This research provides future scholars with a new framework from which to study EM/S and privacy in the organization from the vantage point of contemporary communication technologies such as telephone, voicemail, e-mail, and instant messaging, utilized for organizational communication. As part of this research, a new model is offered that looks at three key components of the panoptic effect: a) communication technology use, b) organizational

factors, and c) organizational policies for EM/S. Data was collected primarily via a web-based survey of individuals (N = 307) from a variety of organizations across the country.

Results indicated a number of significant findings, but only mixed support overall (and no support for the overall model tested). First, individual beliefs about a communication technology's surveillance capabilities was found to be a strong predictor of the perceived surveillance potential for that technology. Second, individuals in organizations with a perceived open communication climate perceived less surveillance potential from organizational factors within the organization. Next, the presence of and enforcement of a right-to-monitor policy were strong predictors of perceived surveillance potential from EM/S policies. Significant relationships were found between increases in overall panoptic effects from the three principal components with both reduced perceptions of privacy and perceived organizational fairness.

Based on these results, theoretical contributions of the study along with practical implications are reviewed.

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Chapter 1 - Introduction

In the post-September 11th world, issues of privacy, monitoring and surveillance have come to the forefront of concerns among the citizens of this nation. With the full implementation of the "United and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act of 2001" or USA PATRIOT Act in October 2003, many citizens and civil liberty organizations are concerned about the effects this law will have on the general population, in addition to the terrorist organizations it is intended to thwart. This act, originally signed by President Bush only a few weeks after the September 11th tragedy, has greatly increased the government's ability to conduct surveillance by expanding its powers under the Federal Wiretap Act, the Electronic Communications Privacy Act (ECPA), and several others. The government now has the ability to monitor and collect information given that many of the procedural hurdles are removed, such as the need to show cause or obtain warrants from the existing surveillance authority.

This legislation has also brought more attention to the practice of organizational surveillance of members and employees, which occurs in nearly 80% of organizations (*AMA survey: Workplace monitoring and surveillance*, 2001). The current climate supporting surveillance is seen as a potential signal to many organizations that surveillance of employees could be tolerated at unprecedented levels. This type of action on the part of the government seems to go against rights guaranteed to the citizens of this nation through the United States Constitution. A cursory examination of the U.S. Constitution however will find no such "right to privacy".[1] This basic right to privacy is often thought to apply to nearly every aspect of life. In the workplace though employees may assert a protection for their own personal effects, but they

cannot claim a protection for activities conducted through the use of the employer's papers or effects (Cozzetto & Pedeliski, 1997). Although current law protects individuals from surveillance of personal communication, exceptions to these laws provide organizations many loopholes that allow them to monitor their employees, sometimes with little or no notice.

The current legal situation with electronic monitoring / surveillance (EM/S) is tenuous at best because of the lack of modern legislation and the rapid advancement of communication technology used in the organization. The decision to monitor or surveil electronic communication may be based more on the loose interpretation of the existing law rather than something more substantial. It is a legal area in which both employees and employers should tread lightly. This dissertation seeks broadly to further our understanding of the problems and issues associated with EM/S use in the workplace.

Although the issues associated with privacy, monitoring and surveillance are broad in scope; an appropriate focus of the work represented here will be on EM/S as it pertains to the work environment. Botan's (1996) work on panoptic effects, or the degree to which individuals have control of or are controlled through communication technology, and the panoptic effect model in particular, will provide a basic framework for this research. In light of contemporary events, I am developing and testing a panoptic effects model focusing on the impact of communication technology, organizational factors, and policy. The ever-increasing relationship between surveillance and the workplace and the impact this may have on key organizational outcomes has yet to be adequately explained and this insight will expand our knowledge and understanding of a vital area of communication research.

This dissertation proposes a study examining a number of critical issues involving privacy, surveillance, and technology in relation to communication in the organization and the

growing tensions that are inherent. First, a new model will be offered that will attempt to predict the occurrence of panoptic effects in the workplace. This model will focus on three key components of panoptic effects: (a) panoptic potential of communication technology, (b) panoptic potential based on organizational factors, and (c) panoptic potential inherent to an organization's surveillance policies. Second, a number of potential outcomes will be assessed looking at the impact of panoptic effects including: (a) organizational fairness, (b) social communication at work, (c) employee privacy, (d) job performance, and (e) job satisfaction. Finally, a specific look at the impact of instant messaging as a contemporary organizational communication technology will be assessed.

This chapter will provide background on the issue of monitoring and surveillance in the workplace in addition to the privacy rights of the employee and employer. Specifically, it will begin by documenting the growing trend of electronic monitoring in the workplace, especially as that relates to new communication technologies. IM will be examined as an example of a key communication technology that demands a better understanding of monitoring and surveillance from a research perspective. The chapter will conclude with a discussion of the overall purpose of this research and a preview of remaining chapters.

ELECTRONIC MONITORING AND SURVEILLANCE

Monitoring and surveillance have been long-standing practices in the work environment, both in the U.S. and abroad (Fairweather, 1999). In fact, Nebeker and Tatum (1993) noted that as long as there has been employment, employees have been monitored. Workers, particularly since the beginning of the Industrial Age, have had progress monitored and work scheduled and streamlined in order to create a more efficient organization. Mechanical keystroke counters (cyclometers), that track the amount of typing an employee performs, have been in use prior to

the 1920s, when telephones began to be monitored (Attewell, 1987). Losey (1994) explains "employee monitoring has been utilized in the manufacturing industry for several decades to track output, inventory and general efficiency" (p.77).

In the Information Age this organizational surveillance is practiced expansively — and comes in many new forms. Before going deeper into the issues of monitoring and surveillance, it should be noted that, even though the two terms are often used interchangeably, they are separate concepts. According to Botan (1996), the term monitoring refers to the collection of information about work regardless of purpose. Surveillance refers more narrowly to the relationship between some authority and those individuals whose performance is being assessed (Botan, 1996; Rule & Brantley, 1992). Monitoring is a much more benign term that could be applied to a variety of situations where data is collected for a number of reasonable or necessary reasons (e.g. monitoring the status of a hospital patient). Surveillance, however often has a suspicious connotation associated with it because the information collected through monitoring has the potential to be used in a negative manner, such as curtailing certain behaviors of the target individual or individuals. Improvements in communication technologies have made both activities easy to accomplish.

Technology plays a large role in workplace observations. Nebeker and Tatum (1993) define electronic monitoring as "the use of electronic instruments or devices such as radio, video and computer systems to collect, store, analyze, and report individual or group actions or performance" (p. 509). This definition covers a broad scope of activities from taping phone conversations and searching archived e-mail messages, to inspecting employee hard drives and monitoring computer activity in general.

In the contemporary organization, technology exists that allows employers to track every keystroke of the computer, report what is on the employee's screen at a particular moment, the e-mails and websites the employee has stored on their office computer, and the amount of time an employee spends online (LaPlante, 2000) are readily available. This type of supervision could be classified as monitoring in general. Yet, if such monitoring were being done to uncover specific wrongdoing, then it could be classified as surveillance. Although both concepts have a somewhat negative connotation associated with them, monitoring generally focuses on observation for maintenance of an accepted condition, whereas surveillance has a much more punitive purpose as it often attempts to identify wrongdoers. When looking at technology, and communication technology in particular, EM/S represents one of the most intriguing aspects of the general monitoring and surveillance field. Beyond measuring general progress or efficiency, this form often seeks to reduce excess utilization of company equipment, time and resources for purposes other than the assigned tasks of the job.

What Is Being Monitored?

In addition to how EM/S is accomplished, looking at the particulars of what is being monitored might yield some surprising results. Seventy-eight percent of major U.S. firms conduct surveillance on their employees; half monitored phone calls, either by recording them (42.2%) or actually listening in on the calls (11.9%) (*AMA survey: Workplace monitoring and surveillance*, 2001). Employees, most in non-management positions (85%) and representing a wide cross-section of organization size and types, who responded to a recent survey (Coopman, Watkins Allen, & Hart, 2003) on how organizational members react to workplace surveillance reported that over one-third of their organizations tracked employee visits to websites, and an additional 31% did not know if their website visits were tracked. Additionally, 23% of the

respondents reported that their employers looked at the material on their computers, whereas 20% indicated that their e-mail messages were being read. A large number of the respondents were unsure of their company's surveillance policy for website tracking (40%) and e-mail monitoring (33%). Fifty-seven percent of the managers surveyed in the 2001 AMA survey reported that their organization uses "blocking" software to prevent phone calls to restricted or inappropriate phone numbers, and 40% reported blocking of Internet connections to unauthorized or inappropriate websites.

Beyond this, approximately 53% of organizations at least perform a simple archive of e-mail files where the data is recycled after 60-90 days (Osterman Research, 2003a). For long-term storage, the percentages are much lower as approximately 7% choose this storage option. As for who is conducting the archiving of the data, individuals perform the task just over 50% of the time, while IT departments handle approximately 44% of this task. Although these current figures are important, the recent progress made in achieving this level of EM/S has been particularly intriguing.

Steady Increases in EM/S in Recent Years

During the past two decades, the workplace has seen a steady increase in surveillance (Botan, 1996; Vorvoreanu & Botan, 2000). Indeed, one of the characteristics that make this particular area of communication research so intriguing is the pace at which EM/S use has grown in the organization. Considering the prevalence of technology use in the organization today, it is possible to get a better understanding of EM/S research. In September of 2001, 72.3 million individuals who were surveyed reported using a computer at work, comprising over half of the total employed workforce. In addition 40% reported using the Internet or e-mail while on the job (Hipple & Kosanovich, 2003). From an occupation standpoint, managerial and professional

occupations reported that 79.6% use computers at work and 65.8% use the Internet. The most common use of the computer in the workplace was to access the Internet generally or exchange e-mail, as 71.8% reported using their computer for these purposes. Although e-mail has facilitated what some see as a more efficient corporate communication system, it has also given the company the ability to more closely monitor those communications (Kovach, Conner, Livneh, Scallan, & Schwartz, 2000).

According to a 2001 survey by the Privacy Foundation, 14 million, or more than one-third, of workers who use the Internet were continuously monitored (Schulman, 2001). One of the key reasons employers monitor their employees is to maintain a high level of efficiency and productivity in addition to limiting their liability to employees' lawsuits (LaPlante, 2000). Electronic surveillance of employees is seen as a growing industry as companies strive to protect themselves from concerns over liability from sexual harassment, employee theft and other misbehavior. Moreover, the 2001 survey (Schulman, 2001) indicated that one of the top reasons for the surveillance by organizations is the low cost involved. The Privacy Foundation noted that sales of employee-monitoring software were estimated at $140 million a year, or approximately $5.25 per year per employee monitored. One lesson issued in the report stated that the inexpensive nature of the surveillance technology is a major factor in corporate decisions to utilize surveillance. One important area of future research, the report concludes, is to investigate the convergence of newer Internet technologies, such as telephony and digital video, to see if these technologies are subject to the same level of monitoring (Schulman, 2001).

In a more recent survey by the American Management Association (AMA) (*E-mail rules, policies and practices survey*, 2003) 52% of U.S. companies (as compared to 47% in 2001) engage in some form of e-mail monitoring and enforce e-mail policies with discipline or other

methods; 22% have terminated employees for e-mail policy infractions; 75% reported that their organization has written policies concerning e-mail; but fewer than half train their employees on these policies. Approximately one-third of these organizations have formalized e-mail retention and detention policies in place. The average worker spends nearly a quarter of the workday on e-mail; 90% admitted that some of their e-mail, usually less than 10%, is personal in nature, and 13% reported not knowing if their e-mail was being monitored.

The AMA Workplace Monitoring Survey (*AMA survey: Workplace monitoring and surveillance*, 2001) found that there has been a drastic, although steady increase—from 35% in 1998 to just over 70% in 2001—in the number of U.S. firms that record and review employee communications and activities on the job (see Table 1.1). During that same time, electronic monitoring increased from 63% in 1997 to 82% in 2001. Storage and review of e-mail messages went from 14.9% to 46.5% in that period. According to the AMA report, most employers do give employees prior notice of monitoring activity at the workplace and typically employ it for random checks or in the situation where there is a suspected threat.

A sizeable portion of this employer use of surveillance of the Internet and other electronic communication tools may be valid to detect a number of potentially problematic behaviors. A survey by Vault.com, an Internet-based job-hunting company, found that of 1,004 respondents, 37.1 % of employees surf the Web "constantly" while an additional 31.9% said they surf a few times a day (Rayburn, 2003). In another study conducted by the Computer Security Institute and the FBI revealed that 78% of surveyed companies, institutions, and government agencies reported Internet abuse by employees (Rayburn, 2003).

A 1997 survey of human resource professionals by the Society for Human Resource Management found that 36% of organizations accessed employee e-mail for business or security

reasons. More dramatically, 75% of the respondents felt that an employer should reserve the right to read all messages in their e-mail systems ("Who's reading your e-mail," 1997). Although e-mail is used in some cases to replace phone calls, there is a big difference between the two. Although telephone calls are considered transitory – ending when the phone is hung up – e-mail messages are more permanent (messages are typically stored on an e-mail server and/or a company computer for an indeterminate period of time). This semi-permanent nature allows companies to more readily examine the conversations of its employees without their knowledge.

Another recent study (Coopman et al., 2003) of employees' responses to new forms of surveillance indicates that 65% think that organizations are justified in monitoring employee's behaviors without their knowledge, and nearly all felt that it was alright for their company to use technology to monitor their own behavior when they were at work. Coopman et al. (2003) believe that these results may indicate that the employees are walking a party line. One respondent indicated that they just accept the surveillance so that they would not appear guilty. Instead of direct responses to surveillance, employees are using other methods of avoiding surveillance. Some respondents indicated that they use password-protected screen savers on their machines, frequently clear the search history of their web browsers, use personal e-mail accounts rather than the work account, use other employee's computers, lock files and folders on their machines, and work on projects that are not able to be monitored.

The issues surrounding employee monitoring have garnered renewed attention because of concerns over employee privacy rights. Nonetheless, the concept of privacy for employees does not exist. "American workers have almost no legal protection from employers who want to poke or prod into their personal lives" ("Privacy invasions," 1993, p. 6). Alderman (1994) acknowledges that few workers realize that there are no federal laws that protect their privacy on

Table 1.1 AMA Electronic Monitoring and Surveillance Survey Results, 1997-2001.

Type	1997	1998	1999	2000	2001
Recording & review of telephone conversations	10.4	11.2	10.6	11.5	11.9
Storage & review of voicemail messages	5.3	5.3	5.8	6.8	7.8
Storage & review of computer files	13.7	19.6	21.4	30.8	36.1
Storage & review of e-mail messages	14.9	20.2	27	38.1	46.5
Monitoring Internet connections	N/A	N/A	N/A	54.1	62.8
Video recording of employee job performance	15.7	15.6	16.1	14.6	15.2
Total active monitoring of communications & performance:					
Without the monitoring of Internet connections	35.3	42.7	45.1	66.2	70.8
Including the monitoring of Internet connections	N/A	N/A	N/A	73.5	77.7
Total of all forms of electronic monitoring and/or surveillance:					
Excluding the monitoring of Internet connections	63.4	67.1	67.3	73.4	77.1
Including the monitoring of Internet connections	N/A	N/A	N/A	78.4	82.2

the job. Additional concerns over employee privacy have been generated by advancements in technology, employer abuse of monitoring systems, and lack of legislation.

As contemporary communication technologies have become more embedded in organizations and the users have become more experienced in their use, the perceptions of communication privacy have led to the false belief by some that communication via technology in an organization is private. For example, Weisband and Reining (1995) noted that user experience and understanding of the technology, both the hardware and software, can impact their perception. For example, the utilization of passwords by some systems may reinforce the notion that the material is protected. Additionally, management policies influence user perceptions of privacy, often because organizations fail to communicate their policies and as a result employees believe that they are free to do and say what they want. Because these communication technologies are utilized beyond the organizational environment in places such as the home, users may be bringing their privacy beliefs with them into the organization.

As has been shown, monitoring and surveillance in general, and EM/S in particular, are part of the contemporary organization landscape—and they tend to reflect greater societal willingness to accept monitoring/surveillance today. Changes in technology have increased both the prevalence and the capabilities of organizations to monitor their members. With little protection guaranteed against the invasion of privacy, especially in the workplace, there is a growing conflict between the rights of the individual and the rights of the organization when it comes to EM/S. Despite this fact, current laws do not provide much relief and proposals for new legal guidelines have become a victim of the times. This, coupled with the constant development of new communication technologies, is leaving organizations and their members without a clear direction to face in the confusing area of EM/S in the workplace

General Background

One of these new communication technologies that is especially relevant to the EM/S discussion is instant messaging (IM). Use is growing rapidly with over 40% of surveyed organizations currently reporting some form of use (Osterman Research, 2002). Originally a social communication channel favored by teens and young adults, the move of IM into the organizational setting may offer new challenges to both management and members alike when it comes to handling the issues of privacy and monitoring / surveillance. Seen as a primarily an informal communication channel, IM offers synchronous communication, like the telephone, but also has the capability of storing conversations for later retrieval, like e-mail.

IM is typically a text-based communication technology in which messages are instantly transmitted to a recipient, allowing for the rapid exchange of information. IM programs are unique in that they allow users to create lists of people with whom they communicate with frequently. These "buddy lists" allow individuals to determine if their buddy is available for a conversation or to determine the status in general. Most systems allow for the creation of "away messages" which help viewers determine your availability for communication.

Many users enjoy the ability to do multiple tasks while also using IM according to Harmon (2003). The idea of "presence" however, makes IM a "powerful, intimate – and potentially burdensome – form of communication" (Harmon, 2003, p. C2). Lee (2004) offers that presence is a critical element in communication, especially in telecommunication (videoconferencing, computer-supported collaborative work, etc.) In her recent review Lee defines presence as that "psychological state in which virtual objects are experienced as actual objects in either sensory or nonsensory ways" (p. 37). It is this type of presence that IM has been

able to capture. Katz (in Harmon, 2003) notes that instant messaging incorporates many of the qualities from e-mail and then lowers the psychological costs of communicating even further. He cautions that although it is casual and easy, instant messaging can be more demanding. Due to IM's capability for faster communication, IM allows for and sometime creates an increased volume in communication also.

Unlike many other communication tools, such as e-mail and the cell phone, IM is infiltrating the workplace from the bottom up as employees bring the tool from home (as opposed to a workplace technology filtering its way from the corporate world to the public at large) (Harmon, 2003). Once banned by many organizations, IM, according to Chen (2002) is quickly becoming as critical to communication as e-mail is in today's organizations. One IM user in New York reported that it helps him establish better working relationships with colleagues in London (Harmon, 2003). Another user in Iowa was nervous about bringing the technology to his law office. "I came at instant messaging like this is going to be horrible. But honestly, it's the most productive thing I've ever seen" (Harmon, 2003).

Rapid Growth in the Organizational Environment

The arrival of IM in the organizational environment has led to a nearly 60% reduction in the use of e-mail among the recently surveyed members of a variety of organizations (Osterman Research, 2003b). Although these data were collected at the individual level and do not represent the organizational level, it does point to some interesting possibilities for future usage of communication technology at the organizational level and the need for more in-depth research including a look at key organizational factors. These organizational members were also surveyed to determine which real-time communication channel users turned to first. E-mail was their first choice (53%), with the phone in second with 36%. IM garnered a 7% share and the fax

percentage was limited to 2%. Of the surveyed organizations, 42% reported using IM in some form or another, with an additional 8% planning on utilizing IM and another 28% looking into the possibility. Respondents reported that of those who use e-mail, 18% were also using IM and they predicted that number to nearly double to 33% within one year.

Business users are expected to make up nearly half of the 500 million people that will be using instant messaging by 2006 (Thorsberg, 2002). At IBM, 300,000 employees use the company's internal IM system to send an average of 3 million messages a day. One manager calculated that it has cut his phone usage by 5% (Emling, 2003). He believes that if IBM took IM away, the employees would "mutiny." Ferris Research predicted that the number of IM users within business would more than double in 2003 to 23 million users worldwide, up from 10 million at the end of 2002 (Kontzer, 2003). They also predicted that by 2007, businesses would be supporting 182 million IM users. This growth and use has become significant enough to require that certain organizations, as noted earlier, record and store all communication handled through this technology. Pending updates to current laws, other organizations seeking to monitor IM will have to use their own judgment and organizational policies to guide their monitoring practices.

The storage/archiving capabilities of corporate versions of IM present organizations with a unique challenge. Although organizations are somewhat restricted in the monitoring of personal synchronous communication, it is much easier for them to review recorded material stored on organization equipment. Corporate IM represents a technology that is both synchronous and easily archivable. This may give organizations the ability to monitor IM, but not during the actual conversation. Because policies on personal use of communication technology vary from organization to organization, as does the level and methods of monitoring,

organizations utilizing IM may have to rethink how those policies are formed, implemented, and enforced.

Differences between Personal and Enterprise IM Applications

Once thought to be a threat to corporate security and productivity, instant messaging is now being welcomed in many organizational settings. With 42% of organizations electing to participate in the survey using IM for business applications (Chen, 2002), organizations are seeing benefits of this new organizational communication tool. IM allows for synchronous text-based communication between individuals along with the capability to transfer documents. Unlike e-mail, the sender of the information knows that the receiver is available to accept the message, data, or both and can receive an immediate response.

Consumer IM applications, however, lack the features that organizations want and in some cases are required to have such as: security, interoperability, archiving, auditing, encryption, authentication, and logging. The Sarbanes-Oxley Act of 2002 (which requires greater corporate disclosure), the updated SEC Rule 17a-4, and the Health Insurance Portability and Accountability Act of 1996 (HIPAA) are examples of current regulations that now require that corporate instant messages be subject to the same rules and record keeping now in place for e-mail, including the archiving of IM conversations (Sarrel, 2003).

One of the leaders in the IM field among the public, AOL and its' AIM application, modified their popular application for use in the organization (AOL, 2002). The company released Enterprise AIM in early November of 2002 in an effort to capture part of the growing market of IM use in organizations. This version of the application allows organizations to host an IM community behind the protection of an organization's firewall protected network. Although no figures are currently available for the company's enterprise version, AOL recently reported it

has 180 million registered users of its' free public version (*AOL members to instant message MSN?*, 2003) and is hoping to convert many of the informal business users of this version to its more corporate friendly edition.

With the introduction of IM into the communication technology mix, the problems associated with employee privacy and EM/S have the potential of getting even worse. Inadequate laws on the books are years out of date and out of tune with the contemporary communication technologies. Understanding these communication technologies and the associated EM/S issues is the new challenge in monitoring and surveillance research. This will be the focus of the dissertation project reported here.

PURPOSE AND DIRECTION OF CURRENT RESEARCH

EM/S is a relatively recent phenomenon in the larger history of monitoring and surveillance in the workplace, with only a few empirically based studies of EM/S found in the literature. Vorvoreanu and Botan (2000) note that the existing research is insufficient for a number of reasons, including the lack of theory. This dissertation project will focus on some of the issues surrounding the monitoring / surveillance of organizational members who use key communication technologies, including IM, in the organizational environment. This project will present a new model for predicting panoptic effects based on three key components. It will test the influence of several theory-based variables on the surveillance potential of: (a) the technologies, (b) organizational factors, and (c) an organization's EM/S policies. The project will also examine the links between the panoptic effects derived from surveillance potential as this relates to several key outcomes: (a) organizational fairness, (b) social communication at work, (c) employee privacy, (d) job performance, and (e) job satisfaction. Beyond the model, this project will investigate IM as a new organizational communication technology that is not

covered under current legislation, in order to gain potential insight into how newer technologies are perceived in the workplace from a surveillance perspective.

When completed, this dissertation project should increase our theoretical awareness of the impact of the panoptic effects of EM/S in the workplace, and the underlying elements that lead to these effects. In addition, it will forward our understanding of the perceptions of privacy in the organization and in turn the effects on organizational communication. This research also provides future scholars with a novel framework from which to study monitoring / surveillance and privacy in the organization from the vantage point of the technologies utilized for organizational communication.

DISSERTATION STRUCTURE

This dissertation consists of four additional chapters. Chapter 2 provides an overview of the scholarly and legal research and proceedings relevant to EM/S in the workplace. Primary focus is on the panoptic effects model (Botan, 1996) and how it can be modified, improved and extended in order to more accurately predict the outcome variables presented. A number of research questions and hypotheses will be offered to this end.

Chapter 3 details how this study was conducted including: (a) procedures, (b) measures used, and (c) analytical methods employed. Participants were members of organizations solicited by students in three primary regions in the U.S.: (a) Pacific coast, (b) Midwest, and (c) Southwest. Students at participating universities recruited each respondent as part of a course assignment or extra-credit project. Data was collected via a web-based survey questionnaire, which employed several established measures as well as some new items to measure and test additional variables.

The fourth chapter will focus on presenting the results of the data collection process and the outcomes to both the research questions and hypotheses proposed in Chapter 2. The final chapter will focus on a discussion of the results and their impact on the current research. Limitations to the research as well as future research directions are presented in this final chapter.

Endnote

[1]This right is often seen as the intent of elements within this document, such as the guarantee against illegal search and seizure, even though it is never spelled out. The Fourth Amendment to the U.S. Constitution holds that, “The right of the people to be secure in their persons, houses, papers, and effects from unreasonable searches and seizures, shall not be violated, and no warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.”

Chapter 2 - Review of Literature

Electronic monitoring/surveillance (EM/S) in the workplace is a profound issue facing both individuals and organizations not only in this nation, but in industrialized nations abroad as well. Beyond what has been covered in the general press, EM/S has also been an issue of some importance in more scholarly and legal arenas, though not nearly to the same degree. The research described here extends currently available theoretical structures as well as provides some new insight into research on EM/S in the workplace.

This area of research is extremely important today, especially in organizations, for a number of reasons. First, as Botan (1996) noted, the workplace is the center of the information society. Second, surveillance in the workplace has continued to increase at dramatic levels especially with Internet-based communication tools. Finally, as new communication technologies enter the workplace, the need for more specific laws and regulations may be needed to clarify the rights of both the employee and employer (Botan, 1996), and research such as what is being conducted for this dissertation may provide some guidance in this regard.

This chapter will review some of the rationale for the use of EM/S in the workplace as well as look into the key area of workplace privacy. From here, an overview of the EM/S literature, with special focus on the original panopticon and derivatives of it (Botan, 1996), will be presented. A look at the current legal and

legislative elements pertinent to the issues of privacy and surveillance in the workplace will follow along with a look at the impact of new communication technologies in the context of EM/S in the workplace. In particular, instant messaging (IM) will be of special concern as it represents one of the latest technologies to make its way into the organization environment. Most important, a new model of panoptic effects will be introduced. This model will focus on three key components: (a) surveillance potential of the communication technology, (b) surveillance potential from organizational factors, and (c) surveillance potential from organizational policies. As a final part of the model, several potential key outcomes will be covered as they relate to EM/S in the workplace. Several research questions and hypotheses will be offered in order to better understand both the model and the overall issue of EM/S in the organization.

THE RATIONALE FOR ELECTRONIC MONITORING/SURVEILLANCE

Monitoring has perhaps always been an aspect of work, though its use in the modern workplace is most strongly traced back to the concepts offered by Taylorism and scientific management. Production was often monitored to ensure maximum output was being obtained from employees. Similar to counting the number of widgets produced in a factory, contemporary technologies in today's organization offer similar monitoring concepts. These concepts include computer monitoring, keystroke counting, video surveillance, spying, eavesdropping, telephone tapping, and active badge systems (Mishra & Crampton, 1998). Computerized work measurement enables employers to more efficiently monitor individual employee productivity, even though telephone

monitoring can be utilized to improve the quality of customer service. Video surveillance allows companies to prevent theft, fraudulent activities, and other workplace-related violations (Vaught, Taylor, & Vaught, 2000). Programs are now available that allow employers to view what is on an employee's computer screen at any given time (Tanaka & Gajilan, 1997).

Some of the most common reasons given for EM/S include: (a) performance reviews: in the customer service and consumer relationship arenas, calls and tapes are routinely monitored to evaluate job performance; (b) legal compliance: in the brokerage, banking, and real estate industries, conversations are taped to give both the consumer and the business some level of legal protection; and (c) cost control: employees who surf the Internet or dial 900 numbers for entertainment expend corporate assets on non-business related activities (*AMA survey: Workplace monitoring and surveillance*, 2001; "Electronic monitoring: Benefit and threat," 1999). Other cited reasons for surveillance include: (a) protection of business information, (b) security and safety, and (c) lack of up-to-date legal regulation. A survey (Grant, Higgins, & Irving, 1988) of an insurance firm found 80% of monitored employees said that production quantity was the most important factor in their performance evaluations. However, 86% of the unmonitored employees felt that quality of work was more important. Whatever the rationales for the use of EM/S technologies, they are having an impact on an employee's privacy in the workplace.

PRIVACY IN THE WORKPLACE

Privacy Rights

Stone and Stone (1990) offered that privacy is the extent to which individuals believe they have control over their personal information and interactions with others. This idea, when examined from the perspective of the work environment, presents a number of challenges. As Donnelly (1986) notes, workplace privacy is, at best, "a tenuous right, one that developed only recently and that, as recent events have shown, can easily succumb in the face of concern over other social problems and increasing technological capabilities" (p. 217).

Regardless of whether privacy is a right or not, many individuals assume it is. In 1979, 75% of Americans believed in a basic right to privacy (Harris & Westin, 1979). Eddy, Stone and Stone-Romero (1999) posit that an increase in privacy concerns is the result of new technologies, which allow for faster and easier access to personal information. They note concerns about privacy are especially important in organizations with human resource information systems, which store pertinent information about an employee such as job status, medical history, performance records, and more. Although the government has access to much of this data as well, via the USA PATRIOT Act, there is a growing backlash against the invasiveness of some of these policies (Carr, 2003).

Although there are variations in employee privacy expectations (see Rosenblum, 1991), the need for privacy at work has also been established (Duvall-Early & Benedict, 1992); thus, the introduction of increased levels of surveillance in today's workplace may

be problematic. Botan (1996) offers that increases in surveillance, whether they are expected or accepted, can result in *panoptic effects*, or the degree to which individual employees feel they are controlled through various communication technologies. In the model to be offered, the panoptic effects may be predicted as a function of two additional components – organizational factors and organizational EM/S policies. This provides communication scholars with a number of issues to investigate.

Additionally, Scott (2001) offers five key assumptions about communication privacy in the workplace that can serve as a guide to organizational communication research in this area. First, the perception of communication privacy should be a central focus of organizational communication scholars. Second, concerns over communication privacy extend beyond just e-mail, but also include traditional forms and newer communication technologies, such as instant messaging. Next, broader issues such as organizational policies and organizational type are extremely relevant in comprehending perceptions of privacy. Fourth, various perceptions surrounding the workplace can have a theoretical connection to communication privacy. Last, attention should be given to key outcomes related to perceived communication privacy concerns.

Perceptions of Privacy in the Workplace

Grant and Higgins (1989) found in their survey of 1500 employees, some of whom were computer monitored and others who were not, 52% believed electronic surveillance should be illegal, with only 31% believing it should be legal. Conflicts between management and employee views on EM/S may be based on the misleading

belief that EM/S of employee e-mail is illegal (see Cappel, 1995). Some research (Fairweather, 1999; Weisband & Reinig, 1995) offers that many individuals, regardless of their knowledge of the law, believe that they have a right to privacy in their communication. Much of the current research into perceptions of privacy has centered on e-mail, which employees consider to be a private channel for their communication. Weisband and Reinig (1995) discuss however, most users severely overestimate the privacy they attribute to using e-mail. This research also indicated that voicemail, which is often seen as analogous to e-mail, shares many of the same privacy beliefs. Scott (2001) found that employees viewed e-mail and voicemail as two of the most private channels of communication. Scott's research also indicated that new channels were viewed as more private as compared to traditional media channels, such as face-to-face and wired telephone. He indicates that this may be the result of the perceived security of newer media, where many channels offer password protection among other measures.

OVERVIEW OF MONITORING AND SURVEILLANCE

Proliferation of EM/S Technologies

New technologies available to employers allow for the easy monitoring of employee e-mail and voicemail, even if employees have deleted messages from their machines. Messages are often stored on servers or backup storage mediums for later retrieval and analysis. Although e-mail does share similarities with postal mail, it is not guaranteed the same protections that federal law offers physical mail (Alderman, 1994).

In recent years, the technology needed for surveillance that is available to companies has become less expensive and less observable. These factors, coupled with the lack of adequate regulation, has led to an explosion of electronic monitoring and surveillance in the workplace (Johnston & Cheng, 2002). Research has shown that deploying surveillance technology is more common because advances in new technology have rendered surveillance tools easy to use and cheap to install (Hartman, 1998; Howard, 1998).

The Panopticon Metaphor

The panopticon metaphor offers a useful tool to examine the effects of surveillance in the workplace. The concept of the panopticon originated from Jeremy Bentham's eighteenth century plan for a prison (Bentham, 1969). The design consisted of two major pieces. The prison cells were located on the outer edge of the structure with the sides of the cell facing the outside and the inside of the structure being transparent. This design allowed sunlight to come in from the outside and for observation to occur from the inside. The second piece consisted of an observation tower at the center of the structure, through which an individual could observer prisoners in their cells through small slits in the structure. This made it difficult, if not impossible for prisoners to know if they were being observed. Though never built, the concept has been applied in a number of areas. Foucault's (1977) theory of surveillance uses the panopticon as the centerpiece.

The panopticon has often been a starting point for describing the type of relationship that EM/S can create within the workplace (Botan, 1996). The structure of the panopticon that Foucault (1977) describes has many parallels with the monitored workplace. Foucault sees the employment of the panoptic-like surveillance as an attempt to subjugate employees to the power of management. Here, employees (prisoners) are always visible and subject to surveillance at any moment by corporate or other managerial (prison) authorities, often without any visible evidence of the monitoring. This design often instills a sense of powerlessness and fear among the observed. Additionally, the desired outcome, from the observer's perspective, may allow for easier control of the observed. Vorvoreanu and Botan (2000) note another similarity in that employees are isolated in their own communication environment, which unlike the physical barriers of the panoptic prison, are more electronic in nature.

The Information Panopticon

Zuboff (1988) offers that management control is freed from the constraints of time and space because of electronic systems capable of collecting information. She gives us the term "information panopticon" based on Bentham's original panopticon (Bentham, 1969). She also notes a difference between the Panopticon of Bentham and the "information panopticon," where an individual can be both the observer and the observed. Although an employee might be under observation by a manager, that same manager might be under observation by another individual higher up in the hierarchy of the organization. Bringing the idea closer to the present, Zuboff notes that new

communication technologies have rendered worker activities transparent to the employer, much like the open cells visible in Bentham's original design.

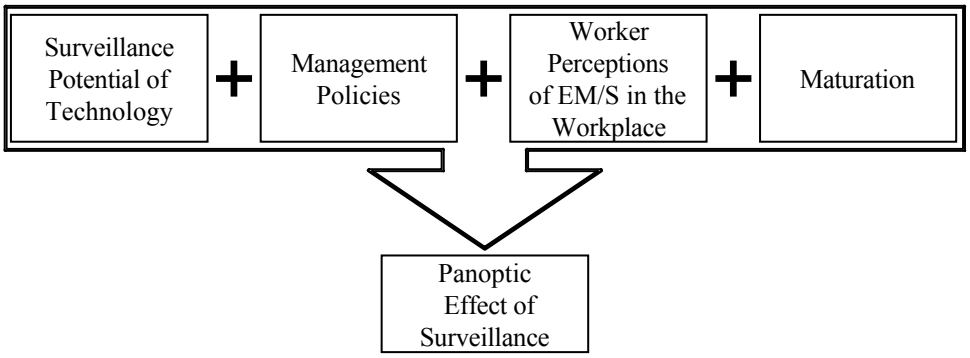
Zuboff (1988) observes that the compartmentalization of the workers in the information workplace can be accomplished without the need for physical structures. Botan (1996) also makes the case that today's surveillance technology is potentially more effective than the older physical panopticons because it can impose a panoptic relationship without the need for walls or borders. Modern electronic surveillance techniques have transformed the role of the observer from one who monitors the physical cell in Bentham's Panopticon to one who observes the transparent actions of the modern worker (Botan & McCreadie, 1990).

The Electronic Panopticon

To extend this research, Botan (Botan, 1996; Botan & McCreadie, 1990) conceived a continuum upon which individual workers either have control of or are controlled by the information technology they utilize. The point at which the individuals become controlled is referred to as the panoptic threshold. This threshold is the point where the information technology becomes a surveillance technology. Botan posits this threshold is unique to each situation, but is determined by the same four factors: panoptic potential of the technology, management policy, employee perception, and maturation (see Figure 2.1).

The panoptic potential of a particular information technology refers to its ability to facilitate surveillance. For example, equipment that allows for the monitoring and

Figure 2.1 Botan and McCreadie's Panoptic Effect Model (1990).



recording of phone calls would place the telephone high on the panoptic potential scale. Botan and McCreadie (1990) forward that the potential is determined by at least four characteristics: degree of visibility, degree of invisibility, degree of record production, and degree of technologically driven data analysis. Degree of visibility refers to the extent to which work behaviors can be surveilled and the extent to which individuals are unable to withhold information. The degree of invisibility is concerned with the extent to which individuals can be surveilled without knowing when it is occurring or what behavior is being assessed. The extent to which an information technology generates a record determines the degree of record production. Finally, the degree of technologically driven data analysis is determined by the extent that the technology facilitates analysis of the raw data collected (Botan & McCreadie, 1990).

The management policy factor (Botan, 1996; Botan & McCreadie, 1990) is concerned with how policy determines how and when technology with surveillance capabilities can be used for that purpose. Zuboff (1988) notes that how these technologies are used is often a function of these management policies. These information technologies, which give workers greater access to information, also provide management with "a deeper level of transparency to activities that had been either partially or completely opaque" (p. 9).

The third factor, worker perceptions (Botan, 1996; Botan & McCreadie, 1990), is concerned with how aware employees are that they are being surveilled. In order for the power relationships to be effective in a surveillance relationship, some awareness on the

part of the individual is necessary. Surveillance can occur without this awareness, but it lacks the panoptic effect. The perception alone that one may be surveilled, even if it is not actually occurring, can be a powerful tool for management and could have serious potential impacts for the individual as well.

Finally, maturation (Botan, 1996; Botan & McCreadie, 1990) refers to the integration of the first three factors such that they work together to increase the panoptic environment. Smith (1989) pointed out that it takes time for high panoptic potential to be incorporated into management policies on surveillance and the related power connection can become more developed as the individuals perceives higher levels of surveillance. Organizations with highly developed surveillance polices still need time to incorporate new technologies into the overall surveillance equation.

One of the proposed characteristics of the electronic panopticon is panoptic power (Giddens, 1985). Giddens offers two levels of this concept: (a) surveillance as the accumulation of coded information, present in what he refers to as 'internal pacification' of nation-states, and (b) surveillance as direct monitoring of subordinates within the capitalistic workplace that has become the key to management in the twentieth century. In the context of the current research, it is the second level that is of primary concern. However, Giddens (1985) notes that the application of information technologies may be encouraging a merging between different surveillance activities. One only needs to look at the recent requests by the federal government for more control over electronic communication technologies as a prime example of this intersection in today's society

(*New rules sought for Internet wiretaps*, 2004). The FBI, DEA and Justice Department are requesting that all forms of digital communications be designed with an electronic backdoor allowing them access to the information pending a court order.

THE LEGAL ENVIRONMENT OF EM/S

Much of today's digital communication may be subject to operational, legal, regulatory, or historical guidelines requiring that the information be captured and managed in some way (Kahn & Blair, 2003). E-mail is a key example of a communication technology largely synonymous with business communication that has come under legal and regulatory scrutiny. The number of court cases involving e-mail communication or records is growing rapidly. One has only to look at the recent corporate debacles of Enron and WorldCom to get a glimpse of the importance of this electronic communication format. Additionally, companies are archiving messages that deal with contract negotiations, communication with government agencies, and responding to industry regulators (Kahn & Blair, 2003). This practice extends now to instant messaging as well.

Current Laws and Proposals

Employers, in general, have the right to monitor outgoing and incoming e-mail and keep records on how long an employee is on the Internet and the activities conducted while online (LaPlante, 2000). The law in this area, like many other areas of law concerning the Internet, is very limited and vague. Fader (1998) offered that the laws in

the U.S. do not protect the privacy of workers very well. Compared to Europe and other industrialized countries, the ability to legally collect data is far more liberal. "American laws don't protect worker privacy very well. We differ from Europe and most industrialized nations. They stringently limit the employee data companies collect, store, and disseminate. We have no such laws" (Fader, 1998, p. 1). Even when company policies state that electronic communications, such as e-mail, will be regarded as private and will not be examined, employees are not necessarily protected if surveillance occurs (Barlow, 2000).

Given that the lines between work and home are blurred, thanks in large part to electronic communication, an employer's right to conduct surveillance may not stop at the organization's front door, but may reach into an employee's home office and computer. Companies are now requesting subpoenas to search employees' home computers for evidence of violating company policies and other transgressions (Hawkins & Mannix, 2000). One recent example had Northwest Airlines obtaining a subpoena to copy the personal, home computer hard drive of employees who had used e-mail to organize an illegal sick out day during contract negotiations (Parenti, 2001). The target of the search was evidence of the alleged sick out organization; it gave Northwest access to anything the employee may have had on their computer at the time the data was copied. Corporate privacy consultant Stephen Paskoff stated that "the only place you're safe from monitoring is in your private thoughts" (Hawkins & Mannix, 2000).

The Fourth Amendment to the U.S. Constitution, often referenced by privacy advocates, does not protect employees from employer monitoring of their performance of job-related activities. In fact, there is no guarantee of a right to privacy anywhere in the U.S. Constitution (Jenero & Mapes-Riordan, 1992). This distinction is incorporated into the Electronic Communications Privacy Act of 1986, which provides protection of private interests of the employee from employer's surveillance, but allows three primary exceptions where surveillance is permitted (Cozzetto & Pedeliski, 1997).

First, the *provider exception* generally exempts e-mail service providers from the prohibitions against interception or accession of e-mail communications in the workplace. This exception makes a private employer exempt from ECPA so long as they are the direct provider of the e-mail system. The *ordinary course of business exception* states that information transmitted in the ordinary course of business is excluded from the definition of "information transmitted by electronic, mechanical, or other devices," as defined by the ECPA. Finally, the *consent exception* applies in the event that one party to the communication has given prior consent to the interception or accession of the communication. This allows communications to be monitored in situations where employees have given consent, possibly unknowingly, when agreeing to the conditions of their employment contained in an employee handbook (Kovach et al., 2000) or in other company documents.

Baumhart (1992) notes that the elements of the ECPA's history may indicate that Congress did not intend to inhibit an employer's ability to monitor employee-generated e-

mail. Moreover, testimony given during crafting of the legislation reflected a prevailing concern for the company, rather than the individual's employee privacy. Even though the Federal Wiretap Act recognizes the expectation of privacy for oral conversations, where both public and private employers are prohibited from intercepting and recording "wire communications" of employees, even this is subject to the *business exception* following the passage of the ECPA. The intent of the ECPA, introduced by Senator Patrick Leahy in 1985, was to give the same type of privacy protections to e-mail that already existed for regular mail or voice communication carried over wire (Blodgett, 1986). Then director of the ACLU's Privacy and Technology Project, Jerry Berman said, "Privacy law has to be brought into line with new technology" (Blodgett, 1986, p. 28).

The ECPA defines electronic communication as "any transfer of signs, signals, writing, images, sound, data, or intelligence of any nature transmitted in whole or part by wire, radio, electromagnetic, photoelectronic or photo-optical system that affects interstate or foreign commerce…" ("ECPA," 1986, p. 2). State laws govern intrastate communication in most cases. Though not specifically mentioned by the ECPA, courts considering cases involving e-mail and other computer-based electronic communication methods often look to this act, and its provisions and exceptions, for legal guidance in their decisions. Still, on the surface, the ECPA seems to offer a great deal of protection for communication technologies such as e-mail, the exceptions noted earlier provide most organizations great latitude in surveilling e-mail and similar technologies.

There is one specific area where e-mail communication is thought to be protected under the ECPA. This protection belief comes from the prohibiting the interception of electronic messages during transmission or when in transit to a recipient. Here, messages cannot be intercepted in a manner similar to wiretapping. This has been upheld by several court cases involving e-mail that is in storage (Watson, 2001). However, there are two exceptions to this protection. First, it does not apply to conduct "by the person or entity providing a wire or electronic communications service," or second, a "user of that service with respect to a communication of or intended for that user" ("ECPA," 1986). This exemption, known to many as the service provider exception, could be applied to many organizations that host their own e-mail or other electronic communication systems. It allows companies who own their own communication networks to monitor their use and content at will. With respect to the current form of e-mail, the ECPA does not adequately cover e-mails containing personal messages originating from outside of the organization's network. The ambiguity stems from the vagueness of portions of the ECPA such as the service provider exemption and the lack of a clear definition of prior consent.

Although technologies such as e-mail and voicemail are under the broad coverage of the ECPA, the existing regulations included in the ECPA are by and large inadequate. Many of the most common new communication technologies, such as e-mail, voicemail, and in some cases instant messaging, produce a recorded history of that communication. Martucci and Place (1998) document that because of the recorded history, organizations

have a much easier time of monitoring these asynchronous channels as opposed to synchronous channels such as wired and wireless phones, where monitoring or interception of these messages is usually prohibited. Technologies that do not allow for stored messages or conversations are, in general, protected from monitoring and surveillance, especially if the conversation is deemed "personal." If an attempt is made to monitor a phone call and it is determined to be personal in nature, monitoring must cease in most cases (see "Deal v. Spears," 1992). Monitoring may be allowed if organizational policy forbids personal use and all communication is deemed business related ("ECPA," 1986). In this situation, even personal messages are subject to monitoring because in essence they should not be occurring.

Attempts to Update Current Laws

In 1991, the Privacy for Consumers and Workers Act (PCWA) was proposed in the U.S. Congress. It contained provisions that would allow companies to monitor employee's e-mail and use the information against them to some extent. Prior to conducting the monitoring of an employee; however, the company would be required to inform them of the possibility, form, and scope of the monitoring The act sought the following protections: (a) employers cannot intentionally collect personal data unless it is job related, (b) the information cannot be shared in the organization unless there is a business need-to-know, (c) employers are prohibited from monitoring in bathrooms and locker rooms, unless it is part of a criminal or civil investigation, and (d) monitoring

through hidden video cameras is banned unless it is part of a criminal or civil investigation (Vaught et al., 2000). The act failed passage.

The Notice of Electronic Monitoring Act was proposed in the U.S. Congress in July of 2000. Had the bill survived, it would have changed/updated many of the laws currently in place. In summary, the bill would have required employers to notify their employees if they wished to conduct surveillance of their employee's e-mail or other electronic communications ("The Notice of Electronic Monitoring Act," 2000). Specifically, employers would have to give prior notice of the monitoring, the form of communication to be monitored, the means by which the communication would be monitored, the type of information that would be obtained, the frequency of the monitoring, and the intended use of the information obtained. Watson (2001) noted that the bill's failure was linked to employer groups succeeding in getting the Judiciary Committee to pull the bill from further consideration. These groups claimed that passage of the bill would result in an increase in both litigation and work for human resource personnel.

Pertinent Case Law

In one of the first major cases in electronic communication privacy, ("Katz v. United States," 1967), the Supreme Court determined that the governments bugging of a public telephone booth was a violation of individuals' Fourth Amendment rights and that individuals' telephone conversations are private even if they occur in a public place. Yet, in the case of organizations monitoring their employees using organizational equipment,

these protected rights disappear. In the past, the courts have set aside Fourth Amendment rights if public employers have a compelling interest and if the incursions into an employee's privacy are job-related (Cozzetto & Pedeliski, 1997). Along this line, employers are usually required to show that the incursions are reasonable and are in line with the organization's privacy policy. Reasonableness is seen in many policies as the prior notice of surveillance as required by the ECPA, along with the publication of these policies and an attempt to obtain consent from the employee.

Smith v. Pillsbury (1996) was one of the biggest cases covering e-mail privacy at work to date. A U.S. District Court in Pennsylvania ruled that the company did not have to notify the plaintiff that his e-mails would be examined. The court stated that since the company owned the equipment, then it was entitled to examine its contents. The case stemmed from an incident where the plaintiff had received e-mail messages at home from his supervisor. He then sent out messages that contained offensive references and threats concerning the company's sales management. Executives at the company got a hold of a printout of the e-mail, then read all of his e-mail messages. He was terminated for "inappropriate and unprofessional comments" over the company's communication system.

In Deal v. Spears (1992), store owners were sued after they recorded over 22 hours of personal phone calls made by the plaintiff, and then terminated her employment. The owners had warned her prior to the recording that she needed to cut down on the amount of personal calls made while at work or face the possibility that they would either

begin monitoring the calls or install a pay phone for employee use. The plaintiff claimed that her termination was the result of illegal monitoring as set down by the prior notice portion of the ECPA. The court agreed stating that the mere suggestion that monitoring might occur was not sufficient notice that it would take place. Cases like this have drawn attention to the importance of company policies that state that monitoring occur instead of ones where *monitoring may occur*.

With all the advantages the modern office has, it is also home to increasingly more invasive measures to monitor communication via voice, e-mail and others. Management analyst James Borck (2000) believes that in order for companies to be compliant with all federal and state regulations concerning electronic monitoring of communications, companies need to take a hard line in defining Internet usage policies. He notes that nearly 80% of large companies utilized some form of Web-filtering technology to help identify workplace use of the Internet. With this monitoring occurring, he believes that companies need to inform their employees of their policies regarding this issue. The American Civil Liberties Union, according to Borck (2000), continues to lobby for increased and more binding legislative guideline concerning privacy expectations at the workplace. Borck argues that it is time for companies to stop hiding their policies and those employees need to be educated about, and reminded frequently of these policies and their importance to the organization.

Policies Concerning EM/S

As noted earlier in some of the popular press references, an employee's comfort with a privacy policy may impact how he or she perceives privacy in the workplace. For example, in organizations where policy is very clear and understood by employees, their expectations of privacy may be more in line with today's legal understandings and therefore result in lowered expectation of privacy and fewer concerns as a result. Botan (1996) listed four elements dealing with surveillance technologies that might shed some light on privacy perceptions. First, an employee must perceive that he/she is being perceived. Second, the employee must recognize that the technology is capable of the monitoring activity described. Third, the policies pertaining to privacy are relevant to the situation. Finally, past examples of surveillance in the organization may influence employee perceptions. If an employee understands and is aware of these elements, Scott (2001) indicates that they should be less likely to perceive privacy.

One of the more prominent themes in both legal statutes and current research (see Scott, 2001) focuses on the importance of organizational policies on privacy. These policies in general address employee "do's and don'ts" of the organization with respect to what is considered private and what is not. A number of general types of policies have been described in the literature (see Drucker & Gumpert, 1999; Scott, 2001; Weisband & Reinig, 1995). First, there are those policies that indicate the organization has the right to monitor employee communication, as it deems necessary. Second, there are the hands-off policies, where organizations do not monitor employee communications--though this

does not necessarily guarantee privacy, especially in a legal sense. Third, many organizations have no established policy on record. This situation can often be the most difficult to navigate for both employers and employees. Though not an actual policy type, employee ignorance of privacy policies is often a common situation regardless of whether an organization has a policy or not. In these situations, employees may have their own ideas of what is private despite the fact that their employers may have other ideas (Scott, 2001). In an analysis of privacy policies, Scott (2001) found that perceptions of privacy were greater for traditional media (e.g. the telephone) when organizations indicated a hands-off policy rather than a right to monitor or no policy condition.

The current research hopes to extend our understanding of the current state of organizational policies on EM/S. Though there have been no major changes to the laws surrounding EM/S in the workplace since the 1986 ECPA, many regulatory bodies, as noted earlier, are now requiring monitoring in certain situations.

NEW COMMUNICATION CHANNELS IN THE WORKPLACE

The focus of this research will now be on the technologies that play a dual-role as both communication and EM/S technologies. One of the most common, e-mail has garnered much of the attention in workplace monitoring, surveillance and privacy efforts. Yet, as DeSanctis and Fulk (1999) note, there are a number of communication channels and differences in perceived levels of privacy associated with each of these in the organizational environment. Alternative channels offer different ways for companies to monitor their employees. For example, cell phone usage statements indicate with whom

an employee has spoken, for how long, and frequency of the calls. Instant messaging in its corporate guise often allows for transcripts of chats to be stored, thus revealing basic information such as the names of those communicating, how long the session lasted, and even the nature of the messages themselves (human analysis could determine if the message was business related or not).

As such, communication privacy concerns are not only limited to e-mail and telephone. As some recent research suggests (see Froomkin, 2000), other technologies such as wireless telephones, fax, video and even IM, are now drawing attention. In June of 2003, the National Association of Securities Dealers began requiring that all IM traffic be archived for at least three years. Commodities broker Steve Slovak sees IM as vital—even as his AOL IM application alerts him to the fact that chats are being recorded (Fordahl, 2003).

The Role of Communication Technology Attributes

Each of these technologies has the capability to be used for both communication and EM/S simultaneously and are common in many organizations. One potential variable in the perceptions of privacy held by employees may relate to a particular communication technology's attributes (Finn & Lane, 1998; Lievrouw & Finn, 1990). In particular, three of Lievrouw and Finn's ten primary attributes are of interest in the current research: (a) type of content, (b) degree of non-simultaneity, and (c) storage. First, the type of content represents how the message is presented. Five types are offered: (a) text, (b) audio, (c) still image, (d) moving image, and (e) raw data. Second, the degree of non-simultaneity is

concerned with whether a particular technology is capable of synchronous communication or not. Synchronous technologies, such as the telephone, often have more protections from surveillance than other technologies. For example, face-to-face and telephone conversations are often specifically mentioned in current privacy statutes such as the ECPA, Federal Wiretap Act and others. With the exception of mailed documents however, asynchronous technologies, such as e-mail and voicemail, are often not given the same level of protection, especially in the organization. Finally, the last attribute, storage, focuses on whether and to what extent messages can be stored. The ability for a message to be stored is a crucial component in whether or not a particular technology can be monitored. The ECPA has provisions that allow organizations to monitor and surveil message stored on an organization's equipment.

THREE COMPONENT MODEL FOR PREDICTING PANOPTIC EFFECTS

Utilizing previous research and the model of panoptic effect (Botan, 1996; Botan & McCreadie, 1990) as a basis, a new model is proposed here. This preliminary model design looks at three key components that lead to panoptic effects in the organizational environment: (a) communication technologies, (b) organizational factors, and (c) organizational EM/S policies. The new model does share some similar elements to Botan's (1996) model, and Zuboff's (1988) ideas as well. First, the surveillance potential of a technology remains as a key component. Second, organizational policies on EM/S also play a role as a key component in the model. Unlike Botan's previous model of panoptic effects where employee perceptions were a separate element, the new model

incorporates them into all three of the primary components in this model. Furthermore, the maturation component has been dropped (though interactions between the three main components will remain of interest).

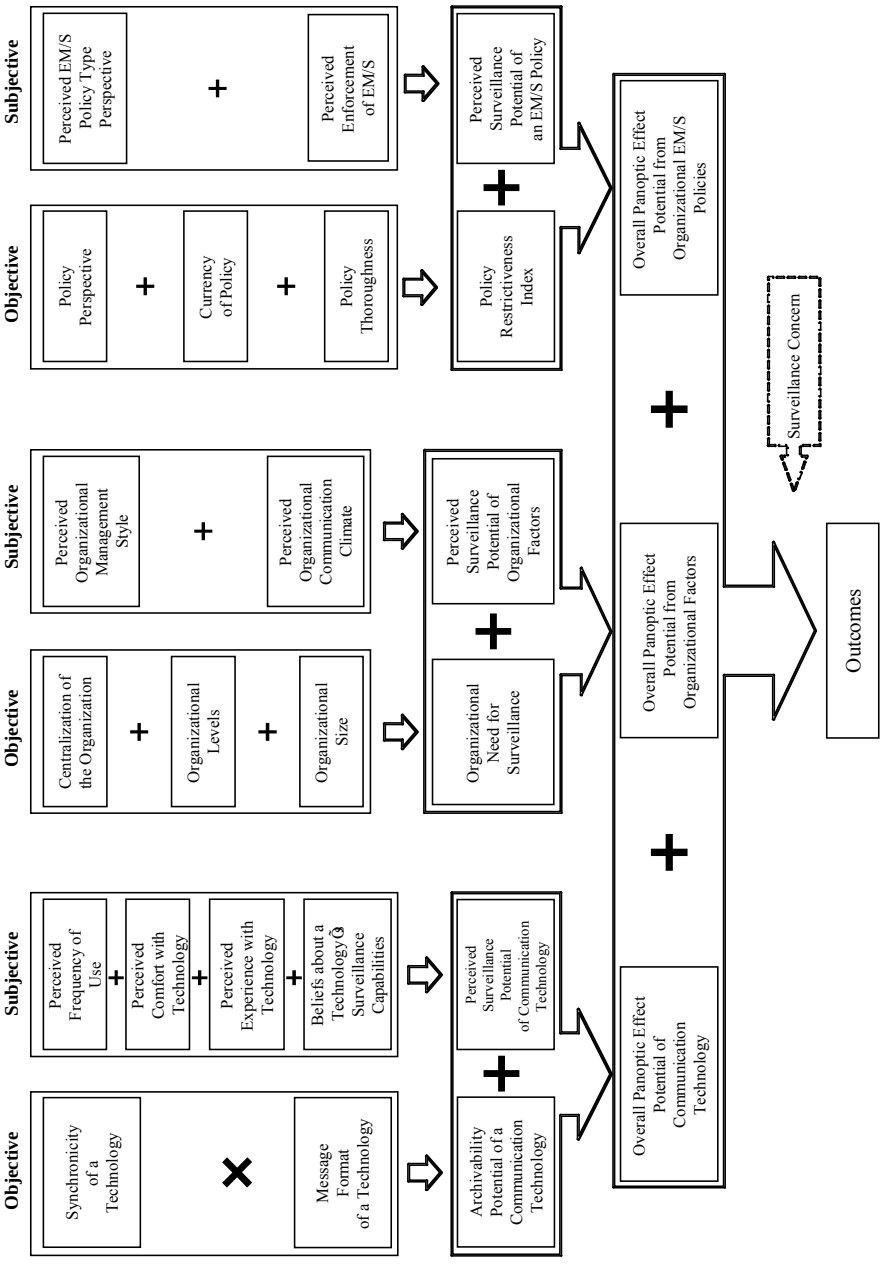
Each of the three components will be presented by looking at both the objective and subjective elements involved. It is theorized here that there may be potential objective elements in communication technology, organizational factors, and organizational policies that may add to the panoptic potential associated with each of these areas. In addition to the objective elements, each component has a number of subjective elements that may be contributing to the perceived surveillance potential in each component. It is also theorized that the combination of both the objective and subjective will provide a more accurate view of each of the three major components of the model. Both the objective and subjective elements represent separate, but distinct pieces of the puzzle, and only through the analysis of the combination of the two will a more accurate understanding of the impact of EM/S in the workplace be possible. From the perspective of Adaptive Structuration Theory (Poole & DeSanctis, 1990, 1992), usage is impacted not only by individual preferences, but also through the knowledge of the intended or proper use of a technology. This intended use may be found in documents such as an organizational policy on EM/S of communication technology. The model (see Figure 2.2) will now be presented with an explanation of each of the components and their underlying objective and subjective elements.

Overall Panoptic Effect Potential of Communication Technology

This component, although similar to Botan's (1996) component, has two main elements–archivability potential of a technology and perceived surveillance potential of a communication technology.

Objective. The first of these, archivability potential of a technology is an objective element that results from the interaction of two communication technology characteristics–synchronicity of a technology and message format of the technology (see Finn & Lane, 1998; Lievrouw & Finn, 1990). Each of these characteristics has the ability to increase or decrease the likelihood that a particular communication technology can archive (record and store) messages. The more synchronous a communication technology is, the less likely it is to be archived because of the resources that are required and some of the legalities associated with intercepting messages in transit. Asynchronous technologies are more likely to be archived because this frequently transpires in the regular process of communicating a message and would not require much, if any, additional resources. With message format, text is more likely to be archived because of the minimal resources required to do so on a routine basis, although audio messages are less likely because they require much more space and resources.

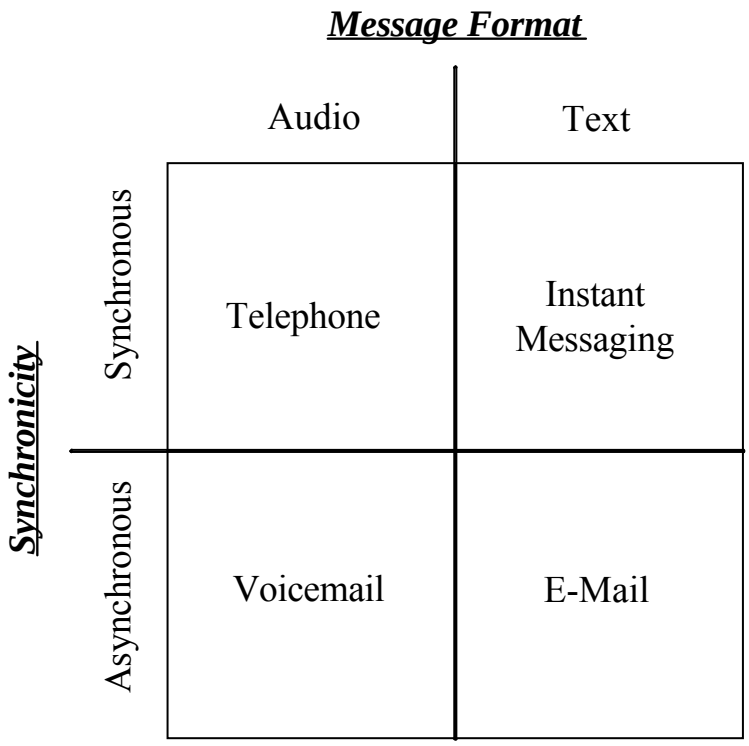
Figure 2.2 Three Component Model for Predicting Panoptic Effects.



The 2 X 2 matrix (see Figure 2.3) places four contemporary communication technologies into cells based on their synchronicity and message format. For example, the telephone would be placed in the synchronous-audio cell, and voicemail would be placed in the asynchronous-audio cell. Similarly, instant messaging is placed in the synchronous-text cell and e-mail is place in the asynchronous-text cell. This interaction of synchronicity and message format would then place each of these technologies on a continuum of archivability potential (see Figure 2.4) from high to low potential. At the high end, e-mail would have the greatest potential for being archived as an asynchronous-text technology. At the low end, the telephone would have the least potential as a synchronous-audio technology. Both instant messaging and voicemail would be closer towards the middle of the continuum. Although voicemail messages are stored until retrieved by the recipients, the storage space required to keep them stored long-term is far greater than that required by stored IM messages. Synchronicity in general represents a somewhat less difficult technical challenge to archiving than does message type–here the changes are software related (a new program) vs. acquiring additional storage space.

Subjective. On the subjective side of this component, perceived surveillance potential of communication technology is defined as the overall perceived surveillance potential that is explained through the use of, understanding of, and surveillance beliefs about a communication technology. This is different than Botan's (1996) surveillance potential of a technology in that the focus of this component is the perceived potential of surveillance

Figure 2.3 Interaction Matrix for Message Format and Synchronicity.



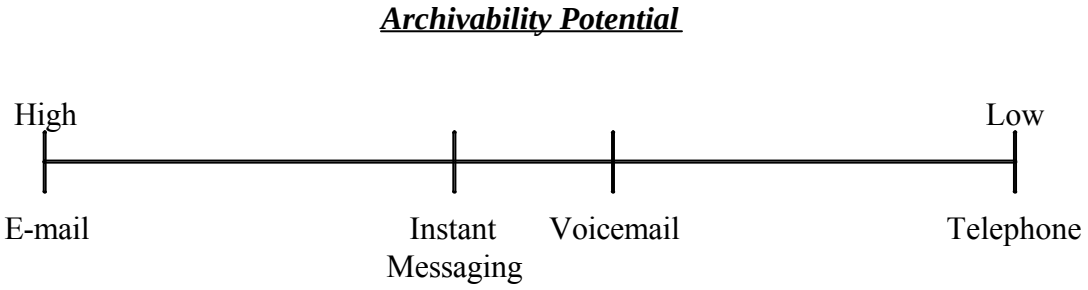
rather than the surveillance capability of a communication technology**.** There are four key elements (frequency of use, comfort, experience, and beliefs about a communication technology's surveillance potential) that influence the perceived surveillance potential of a communication technology. Each of these elements looks at a different aspect of an individual's use of a particular communication technology.

Frequency of use is concerned with how often an individual uses a particular technology in the normal course of work. The more frequently an individual uses a particular communication technology may reduce the perceived surveillance potential, as this use becomes second nature. When this frequency of use is achieved, a user may select a particular channel, not based on which one is less likely to be surveilled, but as the result of a mindless decision (Langer & Moldoveanu, 2000; Timmerman, 2002).

Comfort with a technology focuses on the extent an individual is at ease with using a particular channel. As an individual becomes more comfortable with a particular communication technology, his/her perceived surveillance potential may also be reduced as the general apprehension towards a channel also decreases. Again, the mindlessness factor of choosing a particular communication technology may be in play here (Langer & Moldoveanu, 2000; Timmerman, 2002).

Experience represents a longer-term aspect where a user has achieved a level of proficiency with using a channel. As with the first two elements discussed above, more experience may lead an individual to select a particular channel out of habit or through a

Figure 2.4 Continuum of Archivability Potential for Key Communication Technologies.



mindless selection. Therefore, as an individual's experience with a particular communication technology increases, the perceived surveillance potential of that technology will be diminished.

Both experience and comfort with communication technology and technology in general represent commonly used variables. Previous research utilizing these variables has looked at employee attitudes toward computer-based technology, telephone usage, and preparedness of organizational members with the technology (Coover, 1992; Galinsky, 1997; Guha, 2003). In the current research, these variables are included to understand, at a more basic level, the impact of communication technology on EM/S.

Last, the belief about a communication technology's surveillance capabilities is influenced by whether an employee considers that a particular communication technology can also be used as a surveillance tool. This element is similar to Botan's (1996) surveillance potential of a technology component, but it is the user's perceptions of a technology's capabilities, and knowledge of previous instances of its use as a surveillance tool, that are of interest here rather than the actual capabilities. In essence, the greater the belief that a communication tool can be used for surveillance, the greater the perceived surveillance potential of that technology will be.

Each of these elements, either alone or in conjunction with one another, could affect the overall surveillance potential of a communication technology. As Carlson and Zmud (1999) found, user experiences can impact the use of a technology. These same experiences could also affect the perceptions of a whether a communication tool could

also be utilized as a surveillance tool. Thus, the following predictions are made for this component of the model:

$H1_a$ – As an employee's perceived frequency of use with a communication technology increases, the level of perceived surveillance potential of that technology will decrease.

$H1_b$ – As an employee's perceived comfort level with a communication technology increases, the level of perceived surveillance potential of that technology will decrease.

$H1_c$ – As an employee's perceived experience level with a communication technology increases, the level of perceived surveillance potential of that technology will decrease.

$H1_d$ – As an employee's belief that a communication technology could be utilized for EM/S increases, the level of perceived surveillance potential of that technology will increase.

This subjective look at the perceived surveillance ability of a communication technology and the objective look at the archivability potential of a communication technology can then be combined to influence the overall panoptic effect potential of communication technologies.

Overall Panoptic Effect Potential from Organizational Factors

The second component of the new panoptic effects model looks at the role of organizational factors on the potential for surveillance. This component is defined as the

overall panoptic potential that could result from factors inherent to an organization such as centralization of the organization, organizational levels, organization size, management style, and communication climate. Here, as in the first component, there is both an objective and subjective element to the component.

Objective. The objective elements include organizational centralization, organizational levels, and organizational size. First, an organization's centralization is defined here as the degree to which a central management has control over decision-making and employees (Fayol, 1949). Here organizations would vary across continuum from "very decentralized" to "very centralized" with the later potentially being more conducive to EM/S. An organization that handle large amounts of internal or external communication may feel the need to keep closer tabs on its employee's than one where this is of less concern. Second, the number of hierarchical levels in the organization is relevant. As Fayol (1949) put forth an organization is most effective when managers are responsible for a limited number of employees (20-30 at the first level of an organization and six for higher levels). This is also related to the size element. Size is an element here because larger organizations may have different needs or requirements for EM/S than smaller organizations. The larger an organization becomes, the need for EM/S use should increase in order for the organization to maintain control of its employees. McGregor (1960) noted in his Theory X that, although these beliefs are incorrect, managers often see their responsibility toward their employees as one where they must direct their efforts, control their actions, and modify their behaviors to fit the needs of the

organization. Without this type of management, the theory states that employees would be passive, even resistance to organizational needs. EM/S in essence has given managers another tool to achieve these desired goals. When you combine both organizational levels and size, you get what Fayol designated as an organization's span of control. Here, span of control could identify the need for EM/S in organizations depending on the number of employees managed by a single manager. As the span of control increases for management, the need for EM/S should increase in order to provide management with additional opportunities for monitoring that could not be accomplished by normal managerial oversight. Each of these elements (centralization, levels, and size) will be combined to create the organization need for surveillance.

Subjective. On the subjective side of this component, organizational management style and organizational communication climate may also influence surveillance potential. Different management styles could influence an employee's perception of workplace surveillance. Managers with more supportive or democratic styles, as opposed to autocratic styles, may be less likely to employ EM/S than those who view employees in a more mechanistic manor (e.g., cog in the machine). "Managers who tend to trust their employees would be less likely to monitor messages than would managers who tend to be suspicious of their employees" (Weisband & Reinig, 1995, p. 44). Organizational communication climate, defined here as the openness and freedom employees have to communicate with one another, may also point help predict some panoptic effects. Those organizations that want and promote an open and communicative workplace may be less

likely to deploy an EM/S system for fear that it may stifle communication and lead to other negative outcomes. As a result, organizations with a more open communication climate are likely to have a lower perceived surveillance potential from organizational factors.

These two sub-elements, management style and communication climate, may impact the overall element of perceived surveillance potential from organizational factors present in an organization. This major element is concerned with the users perspective of whether they consider some of the organizational factors of their workplace to be possible indicators that surveillance may be occurring. In effect, it seeks to identify how some elements of an employee's work environment can lead to whether or not they believe the potential of surveillance is increased as a result.

$H2_a$ – As the nature of an organization's perceived management style becomes more autocratic, the level of perceived surveillance potential of organizational factors will increase.

$H2_b$ – As the nature of an organization's perceived communication climate becomes less open, the level of perceived surveillance potential of organizational factors will increase.

This subjective look at the perceived surveillance potential of organizational factors and the objective look at the overall need for surveillance provide the key components of the overall panoptic effect potential from organizational factors.

Overall Panoptic Effect Potential from Organizational EM/S Policies

The final major component of the new panoptic effects model, like the first two, has both objective and subjective elements. This component is defined as the overall panoptic potential that could result from factors inherent to an organization's EM/S policy and its implementation such as the policy perspective, clarity, thoroughness, and enforcement of these policies. It should be noted that organizations that do not have an EM/S policy would not have a panoptic effect potential from organizational EM/S policies. If this were the case, this component would fall out of the model. For those that do in some form or another, this component plays an important part in the overall model.

Objective. Looking first at the objective element of the overall panoptic effect potential from organizational policies, policy restrictiveness deals with three areas: (a) EM/S policy perspective, (b) currency of the policy, and (c) the thoroughness of the policy. The EM/S policy perspective areas is based on Weisband and Reinig's (1995) classifications focusing in on right to monitor, hands-off, or no policy. Here, it is theorized that policies lie on a continuum from right to monitor to hands-off. Those organizations with an EM/S policy closer towards the right to monitor end of the continuum will have a policy with a higher level of policy restrictiveness, while organizations with policies leaning towards the hands-off end will have a policy that will have a lower level of restrictiveness. Second, currency is determined by the age of the current version of a policy, or the time since it was most recently updated, either to reflect changes in the law, technology, or an organizations stance on EM/S. Here, the more

current and up to date an EM/S policy is, the more likely it will increase the overall restrictiveness of the policy by incorporating the latest legal and legislative changes as well as the possible introduction of newer communication technologies into the organizational environment. Lastly, thoroughness looks at whether or not a policy is explicit in both the details of using specific technology and the specific consequences for violations of the policy. Those policies that are more thorough in their treatment of the current technology, laws, and consequences will increase the overall restrictiveness of the policy.

Subjective. The perceived surveillance potential of an EM/S policy is influenced by the subjective elements in this component. The subjective elements are concerned with how much an organization's EM/S policy can impact an individual's perception that they are monitored/surveilled in the workplace. Here, there are two important sub-elements of interest with potential influence on the perceived surveillance potential of an EM/S policy: (a) type of EM/S policy, and (b) enforcement of an EM/S policy. First, the type of EM/S policy is concerned with employee perceptions of whether the policy is clearly a right to monitor policy or a hands-off policy. This is measured along a continuum from "completely clear about the right to monitor policy" to "completely clear about the hands-off policy." The more clearly a policy is seen as a right-to-monitor policy, then the perceived surveillance potential should increase. Vague or poorly written policies would still likely have some perceived surveillance potential, while hands-off policies would have little or no perceived surveillance potential. Second, enforcement is

concerned with the respondent's belief about what enforcement of an EM/S policy infers about that policy. Here, this subjective element lies on a continuum from "very clear enforcement of a right to monitor policy" to "very clear enforcement of a hands-off policy". Therefore, the more an employee believes that enforcement of the EM/S policy indicates a right-to-monitor policy, the greater the perceived surveillance potential will be. These two subjective elements, when combined, should provide insight into the perceived surveillance potential of an EM/S policy and argue that objective elements are an important part of the overall picture.

$H3_a$ – As the beliefs about the type of an organization's EM/S policy indicates a right to monitor policy, the level of perceived surveillance potential of an EM/S policy will increase.

$H3_b$ – As the beliefs about enforcement indicate a right to monitor EM/S policy, the level of perceived surveillance potential of an EM/S policy will increase.

Together, the restrictiveness of EM/S policies and the perceived surveillance potential of an EM/S policy will impact the overall panoptic effect potential from organizational EM/S policies. The characteristics of a policy (objective) and an employee's understanding of the policy (subjective) provide a more comprehensive picture of the panoptic effect potential of organizational EM/S policies than previous attempts.

This new model for studying panoptic effects builds upon previous research, especially the work by Botan (1996). It presents a potentially more comprehensive method of determining panoptic effects while maintaining most of the key components and concepts from previous theorizing. Each component has both objective and subjective elements that offer a more balanced approached to understanding the overall picture of panoptic effects.

POTENTIAL OUTCOMES OF EM/S

Much of the research available, as Stanton (2000) found in his review of electronic monitoring in the 1980s and 1990s, focuses primarily on measuring clerical work and the related performance-based outcomes. Stanton and Weiss (2000) suggests that new research should explore the impact of monitoring and surveillance technology outcomes other than performance. To this end, several potential outcomes will now be discussed.

Employee Perceptions of Privacy

Although perceptions of employee privacy in the workplace may vary from organization to organization, Duvall-Early and Benedict (1992) noted that individuals do have the need for privacy. Botan (1996) found that blue-collar workers felt a lack of privacy in the work environment. The feeling of lack of privacy became more pronounced as the belief that they were being surveilled increased. The organization EM/S policy component of the model may play a larger role in this outcome because this

is often where employees learn (officially) what the organization's stance is on EM/S. The following hypotheses seek to predict this relationship with respect to the three components of the new model:

$H4_a$ – As the overall panoptic effect potential from communication technology, organizational factors, and organizational EM/S policies increases, the perceived level of social communication privacy in the workplace will decrease.

$H4_b$ – The overall panoptic effect potential from organizational policies will have the largest impact on the outcome of perceived social communication privacy in the workplace.

Perceptions of Workplace Communication

Beyond the employees' perceptions that the use of EM/S technologies can generate, there are also direct outcomes to their use. As Botan and McCreadie (1990) noted, when information technology is utilized for surveillance it can affect organizational communication by reducing or limiting the need for individuals to communicate or by changing the specific type of communication involvement needed. For example, certain types of interaction such as interpersonal communication between workers, which often has a high degree of privacy attached to it, can vary according to the method of communication utilized. Whereas face-to-face communication, such as water cooler or lunch break conversations, is often protected, the same communication conducted through phone, e-mail or instant messaging and the related level of surveillance could limit the amount or content of that communication because of

concerns over privacy. Communication technology is arguably the most important component of the model affecting workplace communication because it represents the means by which both communication and surveillance may be conducted, and is foremost in the mind of employees needing to communicate regardless of the organizational factors or the policies in place.

Upward communication can also be affected as surveillance limits the need for employees to report information to their supervisors—especially if this data has already been collected for processing. Foucault (1977) noted this relationship demonstrating that the observed individual "is seen, but he does not see; he [sic] is the object of information, never the subject of communication" (p. 200). After implementing Internet tracking software to monitor employee use, one organization was able to cut down the excessive or non-work related activities of its employees. The average employee time spent online fell from one hour a day to less than 15 minutes once employees were told that monitoring was occurring (Richmond, 2004). To this end, the following hypotheses are offered:

$H5_a$ – As the overall panoptic effect potential from communication technology, organizational factors, and organizational EM/S policies increases, the perceived amount of social communication opportunity in the workplace will decrease.

$H5_b$ – The overall panoptic effect potential of communication technology will have the largest impact on the outcome of perceived social communication opportunity in the workplace.

Perceived Job and Social Communication Satisfaction

Beyond the larger perceptual issues, Kallman (1993) offers that there are many more negative aspects to EM/S including increased levels of stress, decreased job satisfaction and quality of work, decreased customer service, and creation of an atmosphere of mistrust. Health problems such as stress, high tension, headaches, extreme anxiety, depression, anger, severe fatigue and musculoskeletal problems were also reported by Flanagan (1994) as a reaction to workplace monitoring. Irving, Higgins, and Safayeni (1986) had similar findings but with some positive outcomes as well. Computer-monitored employees perceived increased stress and lower satisfaction; but also higher productivity, more accurate assessment and increased control. Overall, these problems may in turn lead to increased absenteeism, increased turnover, and decreased productivity (Levy, 1994).

In a survey (Chalykoff & Kochan, 1989) of 960 IRS employees, respondents indicated that variations in employee satisfaction and turnover are attributed to the affective responses to monitoring and prior beliefs about monitoring. Chalykoff and Kochan note as a result that the use of EM/S for control purposes only leads to lower job satisfaction and higher turnover. However, their research also supported the argument that how monitoring is used in practice has a significant impact on a worker's general attitudes and behaviors. Managers that use EM/S to recognize standards, assist performance appraisals, provide feedback, and provide good supervision can help lower the negative effects of monitoring. In light of this previous research on job satisfaction

and the impact of surveillance, the following hypothesis and research question are presented:

H6 – As the overall panoptic effect potential from communication technology, organizational factors, and organizational EM/S policies increases, the perceived level of job satisfaction will decrease.

RQ1 – Which of the three major components of the panoptic effects model (technology, organization factors, EM/S policies) will have the largest impact on the outcome of perceived job satisfaction?

Along this line, satisfaction with social communication in the workplace also presents itself as a potentially important outcome of EM/S in the workplace. Looking specifically at satisfaction from a communication perspective brings a more narrow focus to the current research, rather than focusing solely on primarily organizational behavior variables. To that end, the following hypothesis and research question are offered:

H7 – As the overall panoptic effect potential from communication technology, organizational factors, and organizational EM/S policies increases, the perceived level of social communication satisfaction will decrease.

RQ2 – Which of the three major components of the panoptic effects model (technology, organization factors, EM/S policies) will have the largest impact on the outcome of perceived social communication satisfaction?

Perceived Job Performance

Job performance is an additional outcome that could be influenced by EM/S and is defined as an employee's perception that they produce quality work. As was noted earlier (Grant et al., 1988), monitored employees reported that quantity was more important than quality in overall performance, whereas unmonitored employees felt the opposite. There is also a concern that surveillance is having a negative effect on employer – employee relations (Balitis, 1998). These negative relations and related low morale could in turn be affecting a company's bottom line, which is in direct contrast to one of the common purposes of employee surveillance: improved productivity. An organization would have to determine whether productivity means more of a lesser quality product (monitored employees), or fewer higher quality products (unmonitored employees). To that end the following hypothesis and research question are offered:

H8 – As the overall panoptic effect potential from communication technology, organizational factors, and organizational EM/S policies increases, the overall perceived level of job performance will decrease.

RQ3 – Which of the three major components of the panoptic effects model (technology, organization factors, EM/S policies) will have the largest impact on the outcome of overall perceived job performance?

Perceived Organizational Fairness and EM/S

As found in Greenberg's (1987; Greenberg, 1990) review of organization justice theories, the allocation and decision-making procedures used are just as important to

fairness and satisfaction as outcomes themselves. Thibaut and Walker (1975) as well as Leventhal (1980) pushed the focus of fairness research towards determining the procedural determinants of fairness. Thibaut and Walker's (1975) theory of procedural justice proffered that the amount of control individuals have over decision processes determines the fairness of decisions and outcomes. Thibaut and Walker determined that regardless of the outcome, the individual who believes a procedure is fair would be happier with the decision than those individuals who perceive the procedure as unfair.

Some studies (Folger & Greenberg, 1985; Greenberg, 1990, 1993; Leventhal, 1980; Lind & Tyler, 1988) have indicated that individuals evaluate the fairness of procedures and policies in organization based on criteria such as: (a) consistency, (b) bias suppression, (c) accuracy, (d) correctibility, (e) representativeness, and (f) ethicality. Greenberg (1985) also found in his review that individuals will be more willing to accept negative outcomes if they feel that the distributive procedures are seen as fair as opposed to unfair procedures. Kidwell and Kidwell (1996) found that one factor that helps develop perceived fairness of EM/S is the degree of participation by employees in the process of developing EM/S policies. Ambrose and Alder (2000) offer that fairness reactions can mediate the relationships between EM/S systems, work attitudes, and organizational outcomes.

Kidwell and Bennett (1994b) conducted a study on employee perceptions of EM/S fairness. They found that perceived procedural fairness of EM/S was positively linked to satisfaction with the system. They also found (see Kidwell & Bennett, 1994a)

that procedural justice with EM/S was equivalent to the perceived fairness of a system used for employee evaluation. If employees judge a system to be procedurally fair, then they are more likely to view the system in a positive light. Therefore, employees that have not had an opportunity to participate in the creation/maintenance of their organizations EM/S policy will likely perceive higher levels of perceived surveillance potential of a policy and in turn lower levels of perceived organizational justice/fairness.

As these research findings have noted, prior knowledge or understanding of EM/S policies can positively impact how employees perceive the fairness of the EM/S. The key to a policy's impact lies in its clarity element and whether or not employees perceived the perspective of a policy to be more right to monitor or more hands-off. The overall panoptic effect potential from policies is greater with the perceived right to monitor policies. This component, more than any other, can affect perceptions of organizational justice/fairness because organizations and their use of technology are guided by these policies and this is where employees have an opportunity to have input. Here, in addition to the potential panoptic effects from policies, the potential relationships with the other two major components of the model will be explored. To this end, the following research questions are offered:

RQ4 – How does the overall panoptic effect potential from communication technology, organizational factors, and organizational EM/S policies impact the perceived level of organizational fairness?

RQ5 – Which of the three major components of the panoptic effects model (technology, organization factors, EM/S policies) will have the largest impact on the outcome of perceived organizational fairness?

REVIEW

This chapter has reviewed the relevant literature in the area of EM/S in order to provide a solid background for the current research. From the early concept of Bentham's Panopticon to Botan's (1996) update of the concept in the electronic panopticon, there has been a significant amount of research in the area. However, as indicated by some of the researchers cited here, more work is still needed. As communication technology continues to evolve alongside the contemporary workplace, these issues will become even more important to both employees and those that manage the organizations.

The proposed model presented here seeks to extend the research and our knowledge of the fundamental issues of privacy and surveillance in the workplace and understand the roles that technologies, organizational factors and EM/S policies play. The key components looking at the overall panoptic effect potential – communication technology, organizational factors, and organizational EM/S policies – are each comprised of both inherent objective elements as well as the subjective elements that individual employees perceive. It is through this combination of objective and subjective elements that this model hopes to provide a clearer understanding of panoptic effect potential in the workplace as it relates to organization communication.

Chapter 3 – Research Methods

This chapter will present the research methods that were used for the testing of the hypotheses and research questions presented in Chapter 2. In addition, measures will be discussed for the variables presented in the proposed model. Also, measures for the outcome variables will be discussed. Finally, a description of the EM/S policy analysis process will also be covered.

SAMPLE

Procedures for Generating Sample

Students enrolled in communication courses at three universities, located in the Pacific coast, Midwest, and Southwest regions of the United States, were given course credit or extra credit for soliciting from one to six respondents to complete an online survey questionnaire. Participants for this survey were given copies of the cover letter introducing the survey, as well as general instructions on how to complete the survey. The cover letter detailed both the requirements and the protections given to possible participants. Respondents met the following requirements: (a) be employed at least part-time (20 or more hours per week), but not self-employed, (b) not be employed by any of the three universities, (c) not be a full-time student, and (d) have e-mail and web access as part of their work. Potential respondents were told that all responses would be kept confidential and would only be seen by the researcher. All personal identifying

information was separated from the data prior to analysis. This personal information was only used to verify participation following completion of the survey, and to provide respondents with a way of mailing in a copy of their organization's EM/S policy if applicable. This procedure for data collection and validation has been previously used (see Nicotera, 1994; Scott & Timmerman, 1999). Additionally, students were required to solicit respondents from *different* organizations. Students were also encouraged to find respondents willing and able to submit a copy of their EM/S policy (either in paper or electronic format).

The method of self-report data collection was selected for a number of reasons. First, it allows for the potential of a large number of responses from a demographically and geographically diverse population. Second, it offers the best opportunity to look at the issue of surveillance from many organizational perspectives. Finally, using self-report data will provide a look at how individuals feel about various aspects of EM/S in the workplace and any associated concerns, whether real or imagined. Additionally, Babbie (2001) suggests that surveys are useful for gathering large pools of respondents necessary for conducting a study such as this. Because of the time and geographical restrictions of the potential respondent pool, a survey is the most logical instrument to use. In addition, the structured nature of the responses in the survey helps insure high reliability.

Based on the number of surveys distributed to students to give respondents, there was a potential participant pool of 382 individuals. Because recent uses of this method have provided response rates up to 80% (Scott & Timmerman, 1999), using this

procedure should have yielded approximately 305 total respondents. Additionally, it was expected that between one-third and one-half of the respondents would provide a copy of their organization's EM/S policies—resulting in approximately 127-191 policies. These policies were sought in order to provide additional breadth and depth on the impact of EM/S policies that would not be possible through the survey instrument.

RESPONSE RATES

A large sample size was desired to get a broad base of individuals from a variety of locations, occupations, and industries to provide a more complete look at EM/S in the workplace. As indicated in Table 3.1, 382 cover letters were distributed among the students at the three collection sites. Of those distributed, 316 (83%) surveys were completed online. All participants in the survey were sent an e-mail verification request to confirm their participation in the survey. Nine of these e-mails were returned undeliverable for various reasons. These nine surveys were then dropped from the study. Of the remaining 307 participants (80% usable response rate), 153 (50%) replied with a positive verification of the e-mail. A comparison of the validated and unvalidated surveys was made. No significant differences were found between the two groups. As a result, all 307 surveys were used in the final analysis. In addition to the comparison of verified/ unverified surveys, tests were run to determine any differences between the data collection locations.[1] Again, no significant differences were found.

SAMPLE DEMOGRAPHICS

The sample demographics presented here represent only the surveys used in the final data analysis. As noted earlier, a total of 307 participants completed the online survey. Table 3.2 summarizes the demographic characteristics of the sample for the project. Of those completing the survey, there were slightly more males (54%) than females (46%) and the average age was 38.7 years. A significant portion of the sample (78%) had at least a bachelor's degree, and of these 20% had advanced education degrees. Participants were employed in a variety of occupations including legal, medical, engineering, business, and education. The average number of years a participant had been with their organization was 7.53 years.

In addition to the basic demographic information, other information associated with the current EM/S research was collected. When asked whether or not their organization had an EM/S policy, nearly 41% reported no policy, while 35.5% reported there was a policy. The remaining respondents did not know if their organization had a policy or not. Of those respondents who reported that there organization had a policy, nearly 75% indicated that this policy was not publicly available. Additionally, only 23% reported receiving any formal training on their organization's EM/S policy. Looking at the respondent's working environment, 38% worked in an office with a door, 26% worked in a cubicle with no door, and 25% worked in an open work area.

INSTRUMENTATION

Participants completed the questionnaire online using a web-based survey tool. There were two versions of the survey deployed.[2] Separate versions were used in an attempt to detect any possible ordering effects present in the survey. The website of the survey was provided to respondents along with general directions. The survey was available for approximately three weeks. This online survey was the only method of participation available. This was chosen because the desired sample of participants should be minimally skilled in utilizing the Internet since this research is concerned primarily with the use of communication technologies and their dual role as electronic monitoring / surveillance (EM/S) tools.

VARIABLES

This study sought to determine the extent of the relationships between several technology-, organizational- and policy-related variables and six outcome variables looking at social communication privacy, social communication opportunity, job satisfaction, social communication satisfaction, job performance, and organizational fairness. The hypotheses and research questions presented in the previous chapter look specifically at the relationships between these independent and outcome variables. This section will review the operationalization for the independent and outcome variables utilized in this study. Additionally, after the key variables used to test the hypotheses and research questions are presented, additional constructs related to, but not formally part of

Table 3.1 Response Frequencies and Percentages.

	Southwest		Midwest		West Coast		Total	
	N	%	N	%	N	%	N	%
Surveys Distributed	246	*64.4	51	*13.4	85	*22.2	382	100.0
Surveys Completed	**253	102.9	35	68.6	28	32.9	316	82.7
Surveys Rejected	6	2.4	1	2.0	2	2.4	9	2.4
Surveys Accepted	247	97.6	34	66.7	26	30.6	307	80.4

* = Percent of total distributed surveys

** = Some students recruited more participants than was necessary

Table 3.2 Participant Demographics.

Continuous Variables	Mean	*SD*	Range
Age (N=306)	38.70	13.11	19-78
Years in Organization (N=307)	7.53	8.02	0-34
Organizational Size (N=307)	7378.50	24780.20	2-300000
Organizational Layers (N=307)	5.57	7.42	0-100
Categorical Variables	**Frequency**	**Percentage**	
Sex (N=306)			
Male	165	53.9	
Female	141	46.1	
Education (N=305)			
High School	45	14.8	
Associates	22	7.2	
Bachelors	177	58	
Masters	47	15.4	
Ph.D.	14	4.6	
Job Type (N=305)			
Administrative	48	15.7	
Technical Support	19	6.2	
Engineer	33	10.8	
Medical Professional	15	4.9	
Business Professional	98	32.1	
Legal Professional	11	3.6	
Educator	13	4.3	
Military Professional	2	0.7	
Other	66	21.6	

Table 3.2 (continued)

Categorical Variables	Frequency	Percentage
Organization Type (N=295)		
Technology	47	15.9
Manufacturing	34	11.5
Medical	24	8.1
Legal	14	4.7
Education	26	8.8
Government	23	7.8
Military	1	0.3
Other	126	42.7
EM/S Variables	**Frequency**	**Percentage**
Organization has EM/S Policy (N=299)		
No	122	40.8
Yes	106	35.5
Don't Know	71	23.7
Policy is Publicly Available* (N=141)		
No	105	74.5
Yes	36	25.5
Working Environment (N=304)		
Office with Door	116	38.2
Office w/o Door	7	2.3
Cubicle with Door	7	2.3
Cubicle w/o Door	80	26.3
Open work area	77	25.3
Other	17	5.6

* = Some respondents who indicated "Don't Know" on whether their organization had a policy answered this question

the current research will be presented. Table 3.3 provides the means,[3] standard deviations, and correlations and Table 3.4 displays the scale reliabilities for the variables discussed below.

Communication Technology, Organizational Factor and Policy Factor Variables

Communication Technologies

Four technologies (telephone, voicemail, e-mail, and instant messaging) were examined in this research project. Each has unique characteristics both from a communication perspective and from an EM/S perspective. A copy of the measures used in this project is located in the Appendix A.

Frequency of Use

Each of the four technologies was evaluated for usage frequency over the course of a typical week. In addition to the four technologies, respondents were also asked to estimate their typical face-to-face interaction as well as any other type of communication interaction. Respondents were asked to estimate their total use of technology-mediated communication use by assigning a percentage to each of the four technologies being used in this project, in addition to "face-to-face" communication and "other". Respondents reported that typical usage of the telephone was 27.25% (*SD* = 18.68), 8.29% (*SD* = 6.83) for voicemail, 30.67% (*SD* = 20.65) for e-mail, 4.38% (*SD* = 10.45) for instant messaging, 27.13% (*SD* = 20.59) for face-to-face, and 2.28% (*SD* = 6.27) for other. Individual respondent percentages reported for each of the four technologies were then

used in weighting the individual responses from the technology related variables presented below. Each of the weighted scores for each of the technologies is then added together and a mean score generated for each of the variables.[4]

Technology perceptions

The subjective elements of the perceived surveillance impact of a communication technology were measured using a set of three single-item measures, utilizing 7-point Likert type responses, designed to capture employee perceptions on experience, comfort of a communication technology, and belief that the technology has the capability of being monitored (with higher scores indicating greater levels of these variables). The items on experience and comfort were adapted from Carlson and Zmud's (1999) scale on measuring experience and comfort with e-mail. The reliability of the scale for this study (α = .92) was in line with the original scale. These questions were asked for each of the four technologies (telephone, voicemail, e-mail, and instant messaging) separately. Respondents reported that they were both somewhat experienced (M = 4.69, SD = 1.48) and somewhat comfortable (M = 4.73, SD = 1.47) with the four communication technologies overall. As for their beliefs about the communication technologies being capable of being monitored, respondents somewhat agreed (M = 4.41, SD = 1.57) that this was possible. This item, developed for this research project, asked participants whether or not they "believed" that a communication technology was capable of being monitored. Again, it should be noted that the scores for these three variables are a combined score of the four technologies, weighted by frequency of use. Raw scores for

each of these four variables across each of the four communication technologies can be found in Table 3.5. In addition, a correlation table (Table 3.6) of these technologies along with face-to-face and "other" communication technologies is presented.

Perceived surveillance potential of a communication technology. A six-item measure using a 7-point Likert type scale was utilized to collect data on this subjective component of the overall panoptic effect potential of communication technology. It is based on Botan's (1996) three-item surveillance index and was modified to look at communication technology. The original scale's (α = .80) wording focused on general surveillance, while the items in this measure were written to specifically ask about communication technology. Three items have been added, two additional items looking at personal beliefs about surveillance, and one additional item looking at perceptions of other employees' beliefs. A principal components analysis of the six items indicated that all six items factored into a single component for each of the four technologies. A reliability analysis of the six items resulted in the following alpha scores: telephone = .84; voicemail = .84; e-mail = .88; and instant messaging = .85. The combined weighted mean score for this variable was 2.75 (*SD* = 1.34) indicating a low perceived surveillance potential from communication technologies.

Table 3.3 Correlations, Means and Standard Deviations for Variables.

	Variable	N	Mean	*SD*	1	2	3	4	5	6	7	8	9	10	11
1	Comfort w/technology (Weighted)	301	4.73	1.47	1.00										
2	Experience w/technology (Weighted)	303	4.69	1.48	.99**	1.00									
3	Belief that technology can be monitored	302	4.41	1.57	.85**	.84**	1.00								
4	Surveillance Potential from Technology (Weighted)	284	2.75	1.34	.62**	.61**	.63**	1.00							
5	Centralization	304	4.69	1.59	-0.05	-0.05	-0.05	-.13*	1.00						
6	Size (Standardized)	280	3.88	1.86	-0.06	-0.07	-0.05	0.10	-0.05	1.00					
7	Layers (Standardized)	300	4.31	1.76	-0.07	-0.07	-0.10	0.11	0.04	.63**	1.00				
8	Management Style	304	3.58	1.49	0.10	0.10	0.09	0.08	0.21**	0.08	0.09	1.00			
9	Communication Openness	302	5.53	0.97	-0.01	0.00	0.01	-.17**	-0.02	-.12*	-.14*	-.33**	1.00		
10	Surveillance Potential from Organizational Factors	302	3.50	1.61	0.05	0.04	0.13	.52**	0.02	0.12	.16**	.17**	-.24**	1.00	
11	Type of EM/S Policy	185	4.70	1.45	0.06	0.07	0.12	.22**	-0.06	.25**	.28**	.23**	-0.06	.24**	1.00

*p <.05, **p<.01

Table 3.3 (continued)

Variable	N	Mean	*SD*	1	2	3	4	5	6	7	8	9	10	11	12
12 Enforcement of EM/S Policy	187	4.35	1.36	0.02	0.01	0.12	.32**	0.00	.28**	.20**	.18*	-0.07	.33**	.71**	1.00
13 Surveillance Potential from EM/S Policies	181	4.14	1.57	0.08	0.09	0.22	.49**	-0.02	.18*	.24**	.18*	-0.13	.64**	.56**	.57**
14 Social Communication Privacy	303	4.30	1.68	-.12*	-.13*	-.19**	-.45**	0.04	-.20**	-.20**	-.19**	0.16**	-.46**	-.42**	-.34**
15 Social Communication Opportunity	305	5.88	1.04	-0.04	-0.02	-0.01	-.12*	-0.06	-0.09	-0.05	-.13*	.21**	-0.11	0.01	-0.05
16 Organizational Fairness	297	5.53	1.11	0.02	0.02	0.08	-0.09	-.12*	-0.08	-.14*	-.50**	.46**	-.25**	-0.02	-0.05
17 Job Satisfaction	305	5.52	1.09	0.00	-0.02	0.03	-.14*	-0.03	-0.04	-.15*	-.42**	.44**	-.23**	-0.07	0.02
18 Social Communication Satisfaction	302	5.47	0.97	-0.04	-0.03	0.01	-.21**	-0.04	-0.10	-0.09	-.34**	.49**	-.21**	-0.08	-0.04
19 Job Performance	301	6.21	0.74	0.10	0.09	0.08	-0.02	0.04	0.04	0.04	-0.08	.18**	-0.08	0.03	0.03
20 Surveillance Concerns	305	3.98	1.55	0.08	0.08	0.10	.20**	0.01	0.05	0.03	-0.05	.21**	0.23**	.40**	.31**
21 Social Desirability	295	3.17	0.77	-0.03	-0.03	0.03	0.04	-0.07	-.17**	-.20**	0.02	-.15**	0.10	-0.04	-0.07

*p<.05, **p<.01

Table 3.3 (continued)

	Variable	13	14	15	16	17	18	19	20	21
13	Surveillance Potential from EM/S Policies	1.00								
14	Social Communication Privacy	-.50**	1.00							
15	Social Communication Opportunity	-.10	.13*	1.00						
16	Organizational Fairness	-0.10	.20**	.25**	1.00					
17	Job Satisfaction	-.15*	.19**	.22**	.57**	1.00				
18	Social Communication Satisfaction	-0.13	.27**	.50**	.52**	.59**	1.00			
19	Job Performance	-0.03	0.09	0.06	.13*	.28*	.14*	1.00		
20	Surveillance Concerns	.44**	-.26**	0.01	.19*	0.11	.12*	-0.06	1.00	
21	Social Desirability	-0.04	-0.05	-0.02	-.13*	-.20**	-.09	-.25**	-0.07	1.00

*p<.05, **p<.01

Table 3.4 Scale Constructs and Descriptive Statistics for the Final Questionnaire.

Constructs and Items	Mean	*SD*	α
Primary Independent Variables			
Communication Technologies			
Frequency of Use			
Telephone	27.25	18.68	N/A
Voicemail	8.29	6.83	N/A
E-mail	30.67	20.65	N/A
Instant Messaging	4.38	10.45	N/A
Face-to-Face	27.13	20.59	N/A
Other	2.28	6.27	N/A
Experience (Weighted)	4.69	1.48	N/A
Comfort (Weighted)	4.73	1.47	N/A
Belief that a technology is capable of being monitored (Weighted)	4.41	1.57	N/A
Perceived Surveillance Potential of a Communication Technology (Weighted)	2.75	1.34	N/A
Telephone	3.47	0.48	0.84
Voicemail	3.26	0.47	0.84
E-mail	4.27	0.25	0.88
Instant Messaging	3.74	0.37	0.85
Organizational Factors			
Centralization	4.69	1.59	N/A
Size (Standardized)	3.88	1.86	N/A
Layers (Standardized)	4.31	1.76	N/A
Management Style	3.58	1.49	0.94
Communication Openness	5.53	0.97	0.82
Perceived Surveillance Potential from Organizational Factors	3.50	1.61	0.94
EM/S Policies			
Type of Policy Clarity	4.70	1.45	0.97
Enforcement of Policy Clarity	4.34	1.36	0.96
Perceived Surveillance Potential from EM/S Policies	4.14	1.57	0.95

Table 3.4 (continued)

Constructs and Items	Mean	*SD*	α
Primary Dependent Variables			
Social Communication Privacy	4.30	1.68	0.91
Social Communication Opportunity	5.88	1.04	0.86
Organizational Fairness	5.53	1.11	0.92
Job Satisfaction	5.52	1.09	0.92
Social Communication Satisfaction	5.47	0.97	0.82
Job Performance	6.21	0.74	0.85
Other Key Variables			
Social Communication Privacy Concern	3.98	1.55	0.89
Social Desirability	3.17	0.79	0.72

Organizational Factors

Organizational Descriptive Items

Three items constitute the objective portion of the organizational factors component of the model. First, the centralization of the organization was measured on a 7-point Likert type scale with scores ranging from 1 (Very decentralized) to 7 (Very centralized). The mean score for this item was 4.69 (*SD* = 1.59) indicating a somewhat centralized organizational state. Next, respondents were asked to report their organization's size (*M* = 7,378.5, *SD* = 24,780.2, *Mdn* = 3,000) as well as the number of organizational layers present between the lowest level employee and the highest position within the organization (*M* = 5.57, *SD* = 7.72). These numbers illustrate that a wide variety of organizational sizes and levels were present in the sample.

Organizational Management Style

This variable was assessed using a 4-item measure that placed this variable along a 7-point continuum from "autocratic" (where authority relationships follow rigid hierarchical lines and employees have little or no say in the conduct of their work lives) to "democratic" (where the authority relationships are loosely structured / open and where employee input is considered an asset to the company) (Beehr & Gupta, 1987). The four items utilized examined personal beliefs, coworker beliefs, and beliefs based on communication with management. A principal components analysis of the four items indicated that all four items factored into a single component. A reliability analysis of the

four items returned an alpha of .94. This measure resulted in an average score of 3.58 (*SD* = 1.49) indicating a slightly autocratic management style from the overall sample.

Organizational Communication Openness

This variable was determined through the use of a 4-item measure utilizing 7-point Likert type responses. This measure is based on one of the five dimensions of communication climate offered by Dennis (1975) assessing perceived openness of superior-subordinate communication. In addition to the item on superior-subordinate communications, similar items were presented looking at communication with coworkers, other organizational members and upper management. Higher scores on each of the items indicate a greater openness of communication within the organization. A principal components analysis of the four items indicated that all four items factored into a single component. A reliability analysis of the four items returned an alpha of .82. This measure resulted in an average score of 5.53 (*SD* = .97) indicating a relatively open communication environment in organizations from the overall sample.

Perceived Surveillance Potential of Organizational Factors

A six-item measure using a 7-point Likert type response was utilized to collect data on this subjective component of the overall panoptic effect potential of organizational factors. It is based on Botan's (1996) 3-item surveillance index and was modified to look at organizational factors. As noted earlier the original scale's (α = .80)

Table 3.5 Mean Scores and Standard Deviations for Communication Technologies.

Communication Technology	Frequency				Comfort		Experience		Beliefs	
	Mean	*SD*	*Min*	*Max*	Mean	*SD*	Mean	*SD*	Mean	*SD*
Telephone	27.25	18.68	0	100	6.59	0.79	6.58	0.85	6.03	1.45
Voicemail	8.29	6.83	0	35	6.36	1.06	6.38	1.00	5.91	1.48
E-mail	30.67	20.65	0	95	6.65	0.73	6.55	0.83	6.38	1.19
Instant Messaging	4.38	10.45	0	89	4.99	1.94	4.79	2.06	5.92	1.37

Table 3.6 Correlations, Means and Standard Deviations for Communication Technologies.

	Variable	N	Mean	*SD*	1	2	3	4	5	6
1	Typical Weekly Usage of the Telephone	301	4.73	1.47	1.00					
2	Typical Weekly Usage of Voicemail	303	4.69	1.48	.99**	1.00				
3	Typical Weekly Usage of E-mail	302	4.41	1.57	.85**	.84**	1.00			
4	Typical Weekly Usage of Instant Messaging	284	2.75	1.34	.62**	.61**	.63**	1.00		
5	Typical Weekly Usage of Face-to-Face Communication	304	4.69	1.59	-0.05	-0.05	-0.05	-.13*	1.00	
6	Typical Weekly Usage of Other Communication Technologies	280	3.88	1.86	-0.06	-0.07	-0.05	0.10	-0.05	1.00

*p<.05, **p<.01

wording focused on general surveillance. Three items have been added, two additional items looking at personal beliefs about surveillance, and one additional item looking at perceptions of other employee's beliefs. The items in this measure were written to specifically ask about organizational factors. A principal components analysis of the six items indicated that all six items factored into a single component. A reliability analysis of the six items resulted in an alpha score of .94. The mean score for this variable was 3.50 (*SD* = 1.61) indicating a lower than average score for perceived surveillance potential from organizational factors.

EM/S Policies

EM/S Policy Type

This variable focuses on measuring how clearly an EM/S policy is perceived from reading the policy. This was measured on a continuum from "very clear about the hands-off policy" to "very clear about the right to monitor policy." The perceived type of an EM/S policy was determined using a four-item measure utilizing 7-point Likert type responses. Higher numbers indicate a clear right-to-monitor policy, while lower numbers indicate a clear hands-off policy. The items look at the variable from the perspective of personal beliefs, perceptions of coworker beliefs, and perceptions based on organizational communication about the EM/S policy. A principal components analysis of the four items indicated that all four items factored into a single component. A reliability analysis of the four items resulted in an alpha score of .97. The mean score for this variable was 4.70

(*SD* = 1.45), suggesting a slight tendency toward right-to-monitor policies among the sample.

EM/S Policy Enforcement

This variable is concerned with the enforcement procedures related to privacy policies within the organization. It is measured on a continuum from "very clear enforcement of the hands-off policy" to "very clear enforcement of the right to monitor policy." Higher scores indicate more enforcement of right-to-monitor policies is evident in the workplace while lower numbers indicate a more hands-off policy towards enforcement. A principal components analysis of the four items indicated that all four items factored into a single component. A reliability analysis of the four items resulted in an alpha score of .96. The mean score for this variable was 4.34 (*SD* = 1.36), also indicating only a moderate degree of enforcement of right-to-monitor policies on average.

Perceived Surveillance Potential of an EM/S Policy

A six-item measure using 7-point Likert type responses was utilized to collect data on this subjective component of the overall panoptic effect potential of an EM/S policy. It is based on Botan's (1996) surveillance index and was modified to look at organizational EM/S policies. Three items have been added, two additional items looking at personal beliefs about surveillance, and one additional item looking at perceptions of other employee's beliefs. Again, the original scale's (α = .80) wording focused on general surveillance, while the items in this measure were written to specifically ask about the EM/S policy of the organization. A principal components analysis of the six

items indicated that all six items factored into a single component. A reliability analysis of the six items resulted in an alpha score of .95. The mean score for this variable was 4.14 (*SD* = 1.57), indicating a slightly higher than average perceived surveillance potential from organizational EM/S policies.

Panoptic Effect Potential

As described above, there are 3 major component areas of the model (communication technology, organizational factors, and EM/S policies). Each of these components has both an objective and a subjective element that attempts to determine the perceived surveillance potential in each of the areas. When the objective and subjective elements are combined, this results in what is described in the model as the panoptic effects potential from that model component. Any impacts on the outcome variables discussed below are believed to come from the panoptic effect potential from communication technologies, organizational factors and EM/S policies.

PRIMARY OUTCOME VARIABLES

Perceived Social Communication Privacy

Privacy has been measured in the context of workplace surveillance previously (see Botan, 1996). Here, the concern about privacy is directed towards perceptions about social communication privacy in the workplace. A four-item measure was constructed to look at this potential outcome variable. The measure looks at the following: (a) individual perception that communication at work is private, (b) coworker perceptions that communication at work is private, (c) the belief that no one is monitoring communication

who should not be doing so, and (d) the belief that one has very little communication privacy at work. A principal components analysis of the four items indicated that two distinct factors were present. Factor 1 consisted of the individual and coworker perceptions of social communication privacy. This accounted for 48.49% of the variance associated with this scale. The items constituting the second factor were judged to be less relevant and were dropped from the scale. A reliability analysis of the remaining two items resulted in an alpha score of .91. The mean score for this variable was 4.30 (*SD* = 1.68), indicating a slightly above average level of perceived belief that their social communication at work is private.

Perceived Social Communication Opportunity in the Workplace

This variable was assessed through the use of a 10-item measure based on one used by Botan (1996) and derived originally from the ICA Communication Audit (see Goldhaber, Dennis, Richetto, & Wiio, 1979). Four of the items attempted to measure (using 7-point Likert type responses) whether the participant was involved in hierarchical communication within their organization; four items look at the opportunity for social communication within the workplace; and two additional items look at face-to-face communication among coworkers within the organization. The original reliability for Botan's (1996) measure is $\alpha = .77$. A principal components analysis of the 10 items indicated three distinct factors in the current study: (a) access to information, (b) opportunity for social communication, and (c) opportunity for face-to-face interaction. Since the primary intent of this measure was to determine social communication

opportunity, those four items were retained to comprise the measure for this variable. Higher scores on this measure indicated a belief that there was sufficient opportunity for social communication in the organization. A reliability analysis of these four items resulted in an initial alpha score of .83. One item was removed from the measure resulting in higher alpha score ($\alpha = .86$) for the final measure in order to more accurately measure this variable. The mean score for this variable was 5.88 ($SD = 1.04$), indicating a relatively strong belief that the opportunity for social communication does exist within the organization.

Perceived Job Satisfaction

Job satisfaction was assessed using Hoppock's (1935) Job Satisfaction Measure. This measure was selected for two reasons: (a) to keep the overall questionnaire relatively short to avoid as much mortality as possible, and (b) because of its ability to provide reliable scores (McNichols, Stahl, & Manley, 1978) in line with those of larger measures such as the Job Descriptive Index (P. C. Smith, Kendall, & Hulin, 1969). Each item is measured using a seven-point Likert type scale. One item was dropped from the measure as it was originally intended to assess intent to leave as part of the job satisfaction score. This dropped item was replaced with a new item looking at the overall satisfaction with one's job. Reliability for the original measure has ranged from $\alpha = .76$ to .89 (McNichols et al., 1978). For the current research, a principal components analysis of the four items indicated that all four items factored into a single component. A reliability analysis of the four items resulted in an alpha score of .92. The mean score for

this variable was 5.52 (*SD* = 1.09), indicating a relatively strong level of job satisfaction among respondents.

Perceived Social Communication Satisfaction

A new measure was created to look at the variable of perceived social communication satisfaction in the workplace. This measure was based on the job satisfaction measure (see above) and consisted of four similar items focused on perceived social communication satisfaction rather than perceived job satisfaction. A principal components analysis of the four items indicated that all four items factored into a single component. A reliability analysis of the four items resulted in an alpha score of .82. The mean score for this variable was 5.47 (*SD* = .97), indicating a relatively strong level of perceived social communication satisfaction.

Perceived Job Performance

Perceived job performance was assessed using a four-item measure, with 7-point Likert type responses, based on a previous measure found in the Communication Satisfaction Questionnaire (Downs & Hazen, 1988). It has been modified to look at performance from four vantage points: (a) self-perception of the respondent's performance, (b) self-perception of how subordinates evaluate the respondent's performance, (c) self-perception of how management evaluates the respondent's performance, and (d) self-perception of how coworkers would evaluate respondent's job performance. Typically, a superior measures the job performance of a subordinate (ex.

Barrick & Mount, 1993). However, the method of data collection being employed here does not allow for that option. Thus, participants were asked to judge their own performance as determined by their responses to the items. A principal components analysis of the four items indicated that all four items factored into a single component. A reliability analysis of the four items resulted in an alpha score of .85. The mean score for this variable was 6.21 (*SD* = .74), indicating high overall perceived job performance among respondents.

Perceived Organizational Fairness

Perceived organizational fairness was measured utilizing a 5-item scale (Blader & Tyler, 2003) (α = .95) with 7-point Likert type responses for each item. Higher scores on this measure indicate a higher perceived level of organizational fairness within the organization. A principal components analysis of the five items indicated that all five items factored into a single component. A reliability analysis of the five items resulted in an alpha score of .92. The mean score for this variable was 5.53 (*SD* = 1.11), indicating a relatively strong perceived level of organizational fairness among respondents.

ADDITIONAL VARIABLES

Perceived Surveillance Concern

As depicted in the proposed model in Chapter 2, perceived concern for surveillance may moderate how individuals perceive EM/S practices and policies within

the organization. An individual may believe that EM/S is very prominent in the organization, but because they have little concern for this issue, monitoring/surveillance could have little effect on any of the outcomes measured in this project. A new 10-item measure was created based on items from Botan (1996). Four items were concerned with an organization's right to collect information about its employees. Four similarly worded items were concerned with an organization's right to monitor social communication. Two additional items were concerned with determining whether greater controls are needed to limit monitoring and surveillance in the organization. A principal components analysis of the 10 items indicated two distinct factors. The two items looking at limiting monitoring and surveillance were one factor, while the remaining eight items constituted the other factor. With the focus on social communication, it was decided to use only the four items specifically targeting surveillance concerns, as they are the most relevant to the current research project. Higher scores on this measure indicated greater acceptance of EM/S of social communication in the workplace. A reliability analysis of these four items resulted in an alpha score of .89. The mean score for this variable was 3.98 (SD = 1.55), indicating a neutral level of perceived concern towards monitoring and surveillance of social communication in the workplace on average.

Potential Reactions to EM/S in the Workplace

In an attempt to provide an addition insight into behaviors associated with EM/S in the workplace, a list of 15 potential behaviors/actions was developed (see Table 3.6) to determine if respondents were reacting to EM/S by performing one of these behaviors.

Respondents were asked whether or not they had performed any of the provided behaviors. They were also given the option of adding an additional behavior if they desired. These behaviors attempted to capture potential reactions concerning the use of each of the primary technologies of concern in this research study. Response rates varied from a high of 61% (password protecting their computers) to a low of 5% (used someone else's phone for personal calls at work).

ADDITIONAL ITEMS

In addition to these items,[5] twelve items were used to gather information about the use of IM in the organizations utilizing a 7-point Likert type response format. Only those respondents who utilize IM in some manner were asked to answer these additional items. The questions focused on the type of IM system deployed or used, length of use, the frequency of use, and experience using IM (both inside and outside the organization). It is hoped that this data will shed some light on the current use of IM at the organizational level and its growing popularity. From a privacy and surveillance perspective, IM represents a technology not clearly covered in the current legal landscape. The use of IM as an interpersonal communication technology outside of the work environment may impact the way it is used within the organization, potentially leading to further problems concerning personal communication at work. This data will not be used formally for the current dissertation project.

The media richness values for each of the four technologies was also assessed (telephone, voicemail, e-mail, and instant messaging) using Daft and Lengel's (1984;

Daft & Lengel, 1986) scale (see Carlson & Zmud, 1999), $\alpha = .75$. Each technology was evaluated separately using the 4-item measure with 7-point Likert type responses. The technologies were then ranked according to their score for later comparative analysis with privacy and surveillance variables. This data will not be formally used for the current dissertation project.

POST-SURVEY INTERVIEWS

In addition to the web-based survey, a series of post-survey interviews were conducted in an attempt to get a general sense of the impact of surveillance on social communication in the workplace. These interviews were conducted primarily to gather supporting material for purely informational purposes rather than for analytical purposes. A total of 55 respondents indicated (on a survey questionnaire item asking for their participation) that they would be willing to participate in such interviews. Each of the 55 participants were contacted via e-mail to verify their willingness to participate, but only eight of those agreed to the actual phone interview. In the end, seven interviews were conducted. A copy of the interview protocol can be found in Appendix B.

DATA ANALYSIS

Survey Data

In addition to the basic correlation tables calculated for each of the major variables in this research, linear regression analysis was conducted to test the hypotheses

Table 3.7 Potential Reaction to Monitoring Behaviors.

Behavior	Frequency	Percentage
Password-protected your computer to prevent others from using it	188	61.2
Limited your social communication to certain times during the workday	142	46.3
Purchased a cell phone for personal calls or for voicemail for use at work	121	39.4
Registered for a private e-mail address	120	39.1
Deleted files on your work computer to hide signs of personal use	103	33.6
Changed your e-mail, IM, or voicemail password on a regular basis	100	32.6
Purposely avoided any social communication during the workday	92	30.0
Deleted/disabled cookies that might monitor your use of your work computer	77	25.1
Deleted/emptied browser cache to remove records of your activities	75	24.4
Used a public computer (non-company owned) during the workday to check personal e-mail or IM	54	17.6
Used a public phone for personal call or for voicemail during the workday	43	14.0
Used encryption software for e-mail or IM use	33	10.7
Purchased a handheld computer for personal e-mail or IM use while at work	23	7.5
Used a coworker's or someone else's computer for personal e-mail or IM while at work	17	5.5
Used a coworker's or someone else's phone for personal calls or for voicemail while at work	15	4.9

Table 3.7 (continued)

Behavior	Frequency	Percentage
Other	6	2.0
Save personal e-mails on personal device		
Use previously purchased cell phone for personal use		
Used a foreign language to communicate		
Deleted personal e-mails		
Come in early for personal e-mail and work during lunch on personal issues		
Never put information in an e-mail that I would be concerned about someone accessing it		

and research questions presented in Chapter 2. Following this analysis, a structural equation model was developed in an attempt to test the proposed EM/S model also presented in the previous chapter The model was analyzed for both overall fit as well as for individual relationships between the model components. Standard indices of fit (χ^2, CFI, and SRMR) were used in the overall model analysis. Following a test of the overall model, the moderating variable of surveillance concern was introduced. Here, two separate models were tested. First, the overall model was run, but only with data for those placed in the high concern group. Second, the same model was run again, but with those participants from the low concern group. The analysis consisted of a cursory review of means and path coefficients for the model components as well as looking at overall model fit indices.

EM/S Policies

As a result of the lower than expected number of respondents reporting both that their organization had an EM/S policy and that it was publicly available, only 47 respondents were willing/able to submit a policy for analysis. Of these 47 respondents, only 26 policies were received. After a cursory examination of the policies submitted, it was determined that only 13 were relevant EM/S policies appropriate for analysis for this research project. This represents a response rate of between 7-10% of what was originally predicted. As a result, this part of the research project was eliminated.

REVIEW

This chapter has provided a description of the participants and procedure used in this project. In addition, measures were presented covering both the proposed model variables and the potential outcomes variables. Both factor analysis and reliability analysis results were provided for each of these variables. In the following chapter, the results from the regression analysis of the hypotheses and research questions will be presented along with the results of the structural equation model testing of the proposed EM/S model presented in Chapter 2.

Endnotes

[1]Each major variable from the model was evaluated through a comparison of mean scores across all three data collection locations in order to identify any significant differences.

[2]The original survey (see Appendix A) and an alternate were used. The alternate survey place all non-surveillance or non-demographic related items at the beginning of the survey. There were some order effect differences for three items. Scores were higher for these items (experience with, comfort with, and beliefs about a technology's surveillance capabilities) on the original version. No other differences were found.

[3]A number of the technology related variables were negatively skewed (experience, comfort, and beliefs about surveillance capabilities). While the transformation process would have corrected for this skewness, it was decided to leave the data as is. Tabachnick and Fidell (2001) note that though transformations are recommended as a remedy for outliers and for non-normality of the data, they are not universally recommended. The primary reason they note is that the transformed data would make any analysis of the data more difficult to properly interpret.

[4]Following the calculation of scores for both the four individual technologies and the component score for the perceived surveillance impact of each technology, these scores were then weighted. Weighting was determined by utilizing the usage frequency scores discussed above. These weighted scores took into account differences in perceived surveillance potential of each of the technologies and provide a more accurate view of the

perceived surveillance of communication technology in general. For example, when a respondent reported a high percentage of e-mail use, but little use of the other three technologies, then the score for e-mail was weighted more in order to show its greater importance in helping identify the overall perceived surveillance potential and overall panoptic effect potential of communication technology in general. It should be noted that the frequency of use for "face-to-face" and "other" might have impacted the weighted score. This allowed individuals who communicated most frequently through face-to-face communication to have a lower set of weighted communication technology scores because their use of these technologies was also reduced.

[5]Because of the data collection method employed for this research project and its reliance on self-report (perceptual) data, there was the possibility that respondents provided socially desirable responses (indicating that respondents may not want to admit to certain things or actions). This could have undesired effects on the measured variables and ultimately any conclusions drawn from the results. To check for this possibility, a 13-item measure (Reynolds, 1982) was included in the online survey questionnaire. Lower scores indicate a higher level of socially desirable responses. A reliability analysis of scale resulted in an alpha score of .72. The mean score for this variable was 3.17 (SD = .79), indicating a slight level of social desirability among the responses provided. To check whether or not social desirability was an issue in the overall survey, ANOVAs were computed to determine whether there were any significant difference in the responses among three groups: (a) high social desirability, (b) medium social desirability,

and (c) low social desirability. Results indicated that among the major variables of interest, perceived job performance, $F(1, 203) = .101$, $p < .05$, denoted significant differences between these three groups. Due to the manner in which information on perceived job performance was gathered, this unwanted relationship, was a known possibility. In light of this finding, it was decided to proceed using this variable and note this relationship in the results. In addition to the results noted above, the measure used to assess social desirability may not have accessed the necessary information as to correct assess this variable.

Chapter 4 – Results

In Chapter 3, the research methods used in this study were described. This chapter will begin with the results related to the hypotheses and research questions examined in this research.[1] This will be followed by the analysis and results from testing the model presented in Chapter 2. Finally, some post hoc analysis of potential reaction behaviors to surveillance will be offered.

In general, results from the analysis were mixed. Five hypotheses out of a total of 15 were supported. The supported hypotheses primarily came from tests of the relationships between the elements in the upper half of the EM/S model. Analysis of the results also provided answers to each of the five research questions proposed. Additionally, the moderating variable of surveillance concern was included in the analyses related to the outcomes variables, and revealed some moderating effects.

TESTING OF HYPOTHESES & RESEARCH QUESTIONS

Communication Technologies

In the following section, the assessment for each of the four primary predictor variables for communication technology use will be presented. This set of predictors was analyzed using basic linear regression modeling. This model was significant overall across all four communication technologies; but, only one of the predictors, beliefs about a communication technology's surveillance capability, was significant. Below are the

results of the analysis for each predictor and the findings for each of the related hypotheses.[2]

Hypothesis 1a – Frequency of technology use

Hypothesis 1a states that as the employee's frequency of use with a communication technology increases, the level of perceived surveillance potential from that technology will decrease. Linear regression analysis indicated that for the telephone, ß = .02, $p > .05$; voicemail, ß = .03, $p > .05$; e-mail, ß = .09, $p > .05$; and instant messaging, ß = .09, $p > .05$, no significant relationships existed to support this hypothesis (see Tables 4.1 – 4.4). Thus, Hypothesis 1a is not supported.

Hypothesis 1b – Comfort with communication technology

Hypothesis 1b states that as an employee's comfort level with a communication technology increases, the level of perceived surveillance potential will decrease. Here, linear regression analysis indicated that for the telephone, ß = -.08, $p > .05$; voicemail, ß = -.04, $p > .05$; e-mail, ß = .04, $p > .05$; and instant messaging, ß = -.13, $p > .05$, no significant relationships existed to support this hypothesis (see Tables 4.1 – 4.4). Therefore, there is no support for Hypothesis 1b.

Hypothesis 1c – Experience with communication technology

Hypothesis 1c states that as an employee's experience level with a communication technology increases, the level of perceived surveillance potential will

decrease. Again, linear regression analysis indicated that for the telephone, ß = .02, $p > .05$; voicemail, ß = -.06, $p > .05$; e-mail, ß = .01, $p > .05$, and instant messaging, ß = .14, $p > .05$, no significant relationships existed to support this hypothesis (see Tables 4.1 – 4.4). As a result, Hypothesis 1c is not supported.

Hypothesis 1d – Belief that a communication technology could be used for EM/S

Hypothesis 1d states that as an employee's belief that communication technology could be used for E/MS increases, the level of perceived surveillance for that technology will increase. Overall, this hypothesis received support for all four technologies (see Tables 4.1 – 4.4). Linear regression analysis indicated significant relationships for the telephone, ß = .26, $p \leq .001$; voicemail, ß = .21, $p \leq .001$; e-mail, ß = .30, $p \leq .001$; and instant messaging ß = .31, $p \leq .001$. Results for each of the communication technologies imply a strong positive relationship between increased beliefs that a communication technology could be used for EM/S and increased perceived surveillance potential from that technology. Thus, there is strong support for Hypothesis 1d.

Organizational Factors

In the section that follows, the assessment for both primary predictor variables for organizational factors will be presented. A linear regression model was used in which each factor was entered into the model simultaneously. This model was significant overall; but only the communication climate predictor was significant, while the

management style was not—though it did approach significance. Below are the results of the analysis for each predictor and the findings for each of the related hypotheses.

Hypothesis 2a – Perceived management style

Hypothesis 2a states that as the nature of an organization's perceived management style becomes more autocratic, the level of perceived surveillance potential from organizational factors will increase. Linear regression analysis does not provide support for this hypothesis, $ß = .11$, $p < .07$, though it does approach significance. Results point to a slightly positive relationship between increases in perceived autocratic management style and increases in perceived surveillance potential from organizational factors, though again, the relationship was not significant (see Table 4.5). Therefore, H2a is not supported.

Hypothesis 2b – Perceived communication climate openness

Hypothesis 2b states that as the nature of an organization's perceived communication climate becomes less open, the level of perceived surveillance potential from organizational factors will increase. Linear regression analysis indicates support for this hypothesis $ß = -.20$, $p \leq .001$. Results point to a fairly strong inverse relationship between decreases in communication climate openness and increases in perceived surveillance potential from organizational factors (see Table 4.5). Accordingly, H2b is supported.

Table 4.1 Summary of Linear Regression Analysis for Variables Predicting Overall Surveillance Potential from the Telephone.

Variable	B	*SE B*	*ß*
Step 1	2.72	0.71	
Percentage of Weekly Telephone Usage	0.00	0.00	0.02
Experience Using the Telephone	0.03	0.13	0.02
Comfort Using the Telephone	-0.15	0.14	-0.08
Belief That the Telephone Can Be Monitored	0.25	0.06	0.26*

Note. F (4, 289) = 5.14, $p \leq .001$, $R^2 = .07$; $R^2_{adj} = .05$

* $p \leq .001$.

Table 4.2 Summary of Linear Regression Analysis for Variables Predicting Overall Surveillance Potential from Voicemail.

Variable	B	*SE B*	*ß*
Step 1	2.93	0.53	
Percentage of Weekly Voicemail Usage	0.01	0.01	0.03
Experience Using Voicemail	-0.08	0.10	-0.06
Comfort Using Voicemail	-0.05	0.10	-0.04
Belief That Voicemail Can Be Monitored	0.18	0.05	0.21*

Note. F (4, 295) = 3.58, $p \leq .01$, $R^2 = .05$; $R^2_{adj} = .03$

* $p \leq .001$.

Table 4.3 Summary of Linear Regression Analysis for Variables Predicting Overall Surveillance Potential from E-mail.

Variable	B	*SE B*	*ß*
Step 1	0.91	0.88	
Percentage of Weekly E-mail Usage	0.01	0.00	0.09
Experience Using E-mail	0.01	0.16	0.01
Comfort Using E-mail	0.08	0.18	0.04
Belief That E-mail Can Be Monitored	0.40	0.07	0.30*

Note. F (4, 290) = 9.18, $p \leq .001$, $R^2 = .11$; $R^2_{adj} = .10$

* $p \leq .001$.

Table 4.4 Summary of Linear Regression Analysis for Variables Predicting Overall Surveillance Potential from Instant Messaging.

Variable	B	*SE B*	*ß*
Step 1	2.02	0.34	
Percentage of Weekly Instant Messaging Usage	0.01	0.01	0.08
Experience Using Instant Messaging	0.09	0.07	0.14
Comfort Using Instant Messaging	-0.09	0.07	-0.13
Belief That Instant Messaging Can Be Monitored	0.29	0.05	0.31*

Note. F (4, 286) = 9.01, $p \leq .001$, $R^2 = .11$; $R^2_{adj} = .10$

* $p \leq .001$.

EM/S Policies

In this next section, the assessment for both primary predictor variables for EM/S policies will be presented. Again, a linear regression model was used in which each factor was entered into the model simultaneously. This model was significant overall. In addition, the predictor for both clarity about type of EM/S policy and the enforcement of an EM/S policy were found to be significant. The results of the analysis for each predictor and the findings for each of the related hypotheses are below.

Hypothesis 3a – Type of EM/S policy

Hypothesis 3a proposes that as beliefs about an organization's EM/S policy increasingly indicate a clear right-to-monitor policy, the level of perceived surveillance potential from EM/S policies will increase. Analysis using linear regression indicates support for this hypothesis, $ß = .31$, $p \leq .001$. Results indicate a strong positive relationship between increases in right-to-monitor from the EM/S policy and increases in perceived surveillance potential from EM/S policies (see Table 4.6). Thus, H3a is strongly supported.

Hypothesis 3b – Enforcement of an EM/S policy

Hypothesis 3b proposes that as the beliefs about an organization's EM/S policy increasingly indicate enforcement of a right-to-monitor policy, the level of perceived surveillance potential from EM/S policies will increase. Again, linear regression analysis

Table 4.5 Summary of Linear Regression Analysis for Variables Predicting Overall Surveillance Potential from Organizational Factors.

Variable	B	*SE B*	*ß*
Step 1	4.95	0.66	
Management Style	0.12	0.06	0.11
Communication Openness	-0.34	0.10	-0.20*

Note. F (2, 296) = 10.57, $p \leq .001$, $R^2 = .07$; $R^2_{adj} = .06$
* $p \leq .001$.

indicates support for this hypothesis, ß = .35, $p \leq .001$. Results indicate a very strong positive relationship between increasing enforcement of a right to monitor EM/S policy and increases in perceived surveillance potential from EM/S policies (see Table 4.6). Strong support for H3b was found.

Outcome Variables

Perceived Social Communication Privacy

Hypothesis 4a proposes that as the overall panoptic effect potential from communication technology, organizational factors, and EM/S policies increases, the perceived level of social communication privacy in the workplace will decrease. In general, support for this hypothesis was found. Using a linear regression with the moderating variable of surveillance concerns entered in Block 1 and the three panoptic effect potential elements in Block 2, analysis indicates an overall significance in Step 1, F (1, 171) = 12.70, $p \leq .001$, $R^2 = .07$, $R^2_{adj} = .06$; and also for Step 2, F (4, 168) = 12.70, $p \leq .001$, $R^2 = .32$, $R^2_{adj} = .31$ (see Table 4.7). In Step 1, analysis indicates a significant ß = -.26, $p \leq .001$ inverse relationship, suggesting that as perceived comfort with surveillance increases, perceived level of privacy in the workplace decreases. When the panoptic effect potential elements are added in Step 2, additional significant relationships are present. Here results indicate an overall significant model with strong inverse relationships with the panoptic potential from communication technology ß = -.23, $p \leq$

Table 4.6 Summary of Linear Regression Analysis for Variables Predicting Overall Surveillance Potential from EM/S Policies.

Variable	B	*SE B*	*ß*
Step 1	0.80	0.34	
EM/S Policy Type	0.34	0.09	0.31*
Enforcement of EM/S Policy	0.41	0.10	0.35*

Note. F (2, 177) = 53.47, $p \leq .001$, $R^2 = .38$; $R^2_{adj} = .37$
* $p \leq .001$.

.01, and EM/S policies ß = -.24, $p \leq .01$. Organizational factors also demonstrated a mild inverse relationship that approached significance, ß = -.16, $p \leq .06$. There was no significant relationship with perceived concern for surveillance when these other factors were entered into the regression model, ß = -.07, $p > .05$. Overall, H4a is supported. Hypothesis 4b states that of the three panoptic effect potential elements, the potential from EM/S policies will have the largest impact. As noted above, the standardized beta (-.25) for EM/S policies indicated support for H4b. However, a comparison of the two significant betas indicates that they are not significantly different from one another using a 95% confidence interval; thus there is only partial support for this hypothesis.

Perceived Social Communication Opportunity

Hypothesis 5a states that as the overall panoptic effect potential from communication technology, organizational factors, and EM/S policies increases, the perceived level of social communication opportunity in the workplace will decrease. In general, support for this hypothesis was not found. Using a linear regression with the moderating variable of perceived surveillance concern entered in Step 1, F (1, 171) = .02, $p > .05$, R^2 = .00, R^2_{adj} = -.01, and the three panoptic effect potential elements in Step 2, F (4, 168) = .91, $p > .05$, R^2 = .02, R^2_{adj} = .00, analysis indicates no significant relationships in either Step 1, ß = .01, $p > .05$, or Step 2. Thus, H5a is not supported (see Table 4.8). Hypothesis H5b states that of the three panoptic effect potential elements, the potential from communication technology will have the largest impact. Linear regression analysis for communication technology, ß = -.09, $p > .05$; organizational factors, ß = -.04, $p > .05$;

Table 4.7 Summary of Linear Regression Analysis for Variables Predicting Perceived Social Communication Privacy Perceptions.

Variable	B	*SE B*	*ß*
Step 1	5.44	0.33	
Surveillance Concern	-0.29	0.08	-0.26**
Step 2	7.11	0.36	
Surveillance Concern	-0.08	0.08	-0.07
Surveillance Potential from Communication Technology	-0.29	0.10	-0.23*
Surveillance Potential from Organizational Factors	-0.17	0.09	-0.16
Surveillance Potential from EM/S Policies	-0.26	0.10	-0.24*

Note. $R^2 = .07$ for Step 1 ($p \leq .001$); $\Delta R^2 = .25$ for Step 2 ($p \leq .001$).
* $p \leq .01$. ** $p \leq .001$.

and EM/S policies, ß = -.05, $p > .05$; indicates no support for this hypothesis because none of the elements is significantly related to this outcome.

Perceived Job Satisfaction

Hypothesis 6 offers that as the overall panoptic effect potential from communication technology, organizational factors, and EM/S policies increases, the perceived level of job satisfaction in the workplace will decrease. Using a linear regression with the moderating variable of perceived surveillance concern entered in Block 1 and the three panoptic effect potential elements in Block 2, analysis indicates no significant relationships in Step 1, F (1, 168) = 2.10, $p > .05$, $R^2 = .01$, $R^2_{adj} = .06$, but an overall significance for Step 2, F (4, 168) = 4.00, $p \leq .01$, $R^2 = .09$, $R^2_{adj} = .07$. In Step 2, perceived surveillance concern, ß = .21, $p \leq .05$ represented the only significant predictor. As a result, H6 is not supported (see Table 4.9). Research Question 1 sought to determine which of the three panoptic effect potential components would have the largest impact on perceived job satisfaction. Although none of the components was found to be significant, organizational factors, ß = -.19, $p \leq .07$, indicated a weak relationship that did approach significance. Therefore, the organizational factor component appears to be the strongest contributing to perceived job satisfaction (though again, it is not a statistically significant predictor).

Table 4.8 Summary of Linear Regression Analysis for Variables Predicting Perceived Social Communication Opportunity.

Variable	B	*SE B*	*ß*
Step 1	5.85	0.21	
Surveillance Concern	0.01	0.05	0.01
Step 2	6.15	0.27	
Surveillance Concern	0.04	0.06	0.06
Surveillance Potential from Communication Technology	-0.07	0.07	-0.09
Surveillance Potential from Organizational Factors	-0.03	0.07	-0.04
Surveillance Potential from EM/S Policies	-0.04	0.07	-0.05

Note. $R^2 = .00$ for Step 1 ($p > .05$); $\Delta R^2 = .02$ for Step 2 ($p > .05$).

Perceived Social Communication Satisfaction

Hypothesis 7 offers that as the overall panoptic effect potential from communication technology, organizational factors, and EM/S policies increases, the perceived level of social communication satisfaction in the workplace will decrease. Using a linear regression with the moderating variable of perceived surveillance concern entered in Block 1 and the three panoptic effect potential elements in Block 2, analysis indicates no significant relationships in Step 1, F (1, 171) = 2.64, $p > .05$, $R^2 = .02$, $R^2_{adj} = .01$, but an overall significance for Step 2, F (4, 168) = 4.31, $p \leq .01$, $R^2 = .09$, $R^2_{adj} = .07$. In Step 2, perceived surveillance concern, $ß = .20$, $p \leq .01$) again represented the only significant relationship. As a result, H7 is not supported (see Table 4.10). Research Question 2 sought to determine which of the three panoptic effect potential components would have the largest impact on perceived social communication satisfaction. None of the components were found to be significant: (a) communication technology, $ß = -.14$, $p > .05$; (b) organizational factors, $ß = -.13$, $p > .05$; and (c) EM/S policies, $ß = -.07$, $p > .05$. Therefore, none of the panoptic effect components significantly impacted perceived social communication satisfaction.

Table 4.9 Summary of Linear Regression Analysis for Variables Predicting Perceived Job Satisfaction.

Variable	B	*SE B*	*ß*
Step 1	5.22	0.22	
Surveillance Concern	0.08	0.05	0.11
Step 2	5.78	0.27	
Surveillance Concern	0.15	0.06	0.21*
Surveillance Potential from Communication Technology	-0.03	0.07	-0.04
Surveillance Potential from Organizational Factors	-0.13	0.07	-0.19
Surveillance Potential from EM/S Policies	-0.08	0.07	-0.11

Note. $R^2 = .01$ for Step 1 ($p > .05$); $\Delta R^2 = .08$ for Step 2 ($p \leq .01$).
* $p \leq .05$.

Table 4.10 Summary of Linear Regression Analysis for Variables Predicting Perceived Social Communication Satisfaction.

Variable	B	*SE B*	*ß*
Step 1	5.17	0.20	
Surveillance Concern	0.08	0.05	0.12
Step 2	5.70	0.24	
Surveillance Concern	0.13	0.05	0.21*
Surveillance Potential from Communication Technology	-0.10	0.06	-0.14
Surveillance Potential from Organizational Factors	-0.08	0.06	-0.13
Surveillance Potential from EM/S Policies	-0.04	0.07	-0.07

Note. $R^2 = .02$ for Step 1 ($p > .05$); $\Delta R^2 = .08$ for Step 2 ($p \leq .01$).
* $p \leq .01$.

Perceived Job Performance

Hypothesis 8 offers that as the overall panoptic effect potential from communication technology, organizational factors, and EM/S policies increases, the overall perceived level of job performance in the workplace will decrease. Using a linear regression with the moderating variable of perceived surveillance concern entered in Block 1 and the three panoptic effect potential elements in Block 2, analysis indicates no significant relationships in either Step 1, F (1, 171) = .52, $p > .05$, $R^2 = .00$, $R^2_{adj} = .00$, or Step 2, F (4, 168) = .40, $p > .05$, $R^2 = .01$, $R^2_{adj} = -.01$. As a result, H8 is not supported (see Table 4.11). Research Question 3 sought to determine which of the three panoptic effect potential components would have the largest impact on perceived job performance. Here, none of the components had a significant standardized beta: (a) communication technology, $ß = .02$, $p > .05$, (b) organizational factors, $ß = -.11$, $p > .05$, and (c) EM/S policies, $ß = .05$, $p > .05$. It should be noted that while not significant, the moderating variable of perceived surveillance concern, $ß = .21$, $p \leq .06$ did approach significance. As a result, no panoptic effect model component had any significant impact.

Perceived Organizational Fairness

Research Question 4 seeks to understand how the overall panoptic effect potential from communication technology, organizational factors, and EM/S policies impacts the perceived level of organizational fairness. Similarly, Research Questions 5 seeks to

Table 4.11 Summary of Linear Regression Analysis for Variables Predicting Perceived Job Performance.

Variable	B	*SE B*	*ß*
Step 1	6.31	0.15	
Surveillance Concern	-0.03	0.04	-0.06
Step 2	6.36	0.19	
Surveillance Concern	-0.03	0.04	-0.06
Surveillance Potential from Communication Technology	0.02	0.05	0.02
Surveillance Potential from Organizational Factors	-0.05	0.05	-0.11
Surveillance Potential from EM/S Policies	0.02	0.05	0.05

Note. $R^2 = .00$ for Step 1 ($p > .05$); $\Delta R^2 = .01$ for Step 2 ($p > .05$).

identify which of the three panoptic effect potential components has the largest impact on organizational fairness. Using a linear regression with the moderating variable of perceived surveillance concern entered in Block 1 and the three panoptic effect potential elements in Block 2, analysis indicates a number of significant relationships (see Table 4.12). In Step 1, analysis indicates a significant positive relationship, F (1, 171) = 6.34, $p \leq .05$, $R^2 = .04$, $R^2_{adj} = .03$. When the panoptic effect potential elements are tested in Step 2, additional significant relationships are present. Here results indicate an overall significant model, F (4, 168) = 6.09, $p \leq .001$, $R^2 = .13$, $R^2_{adj} = .11$, with a strong relationship for surveillance concern, $ß = .27$, $p \leq .001$, and a strong inverse relationship with organizational factors, $ß = -.30$, $p \leq .01$. There were no significant relationships with either the communication technology component, $ß = .03$, $p > .05$, or EM/S policies, $ß = -.05$, $p > .05$. Thus, the panoptic effect potential model moderated by the perceived level of concern appears to have a negative impact on perceived organizational fairness, with the largest impact, and only significant outcome, coming from the organizational factors component. Additionally, it should be noted that receiving formal training on an EM/S policy was positively correlated with perceived organizational fairness.

Table 4.12 Summary of Linear Regression Analysis for Variables Predicting Perceived Organizational Fairness.

Variable	B	*SE B*	*ß*
Step 1	5.00	0.22	
Surveillance Concern	0.14	0.05	0.19
Step 2	5.54	0.27	
Surveillance Concern	0.19	0.06	0.27
Surveillance Potential from Communication Technology	0.02	0.07	0.03
Surveillance Potential from Organizational Factors	-0.20	0.07	-0.30
Surveillance Potential from EM/S Policies	-0.03	0.07	-0.05

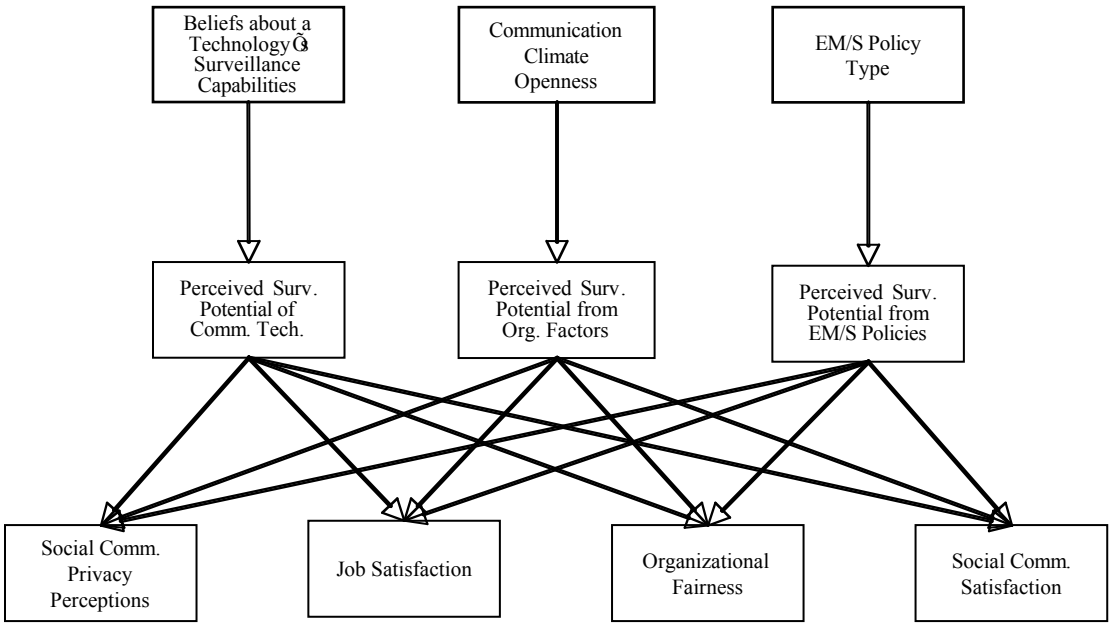
Note. $R^2 = .04$ for Step 1 ($p \leq .05$); $\Delta R^2 = .09$ for Step 2 ($p \leq .001$).

EM/S MODEL TESTING

Overview of Model Testing Procedure

Following the completion of the testing of the hypotheses and research questions, the proposed EM/S model presented in Chapter 2 was tested. First, it should be noted again that the objective component from the EM/S policies portion of the model was dropped due to the lack of sufficient policies to properly analyze. As a result, it was decided to drop the objective elements from the other two model components in order to have a balanced model. Second, the updated model underwent preliminary testing using the Structural Equation Model (SEM) component of EQS (v.6) to determine the strongest and most significant paths within the model. Third, changes to the model resulting from the above tests of the key relationships in the model will be taken into account. Due to limitations within the modeling application and high correlations between some variables, some elements of the model had to be removed in order for the model to be tested. Finally, following these changes the model was run in three separate versions: (a) no moderator group, (b) high concern for surveillance moderator group, and (c) low concern for surveillance moderator group. In general, the overall model did not adequately provide an explanation of the relationships tested. However, there are some differences when comparing the high and low concern moderator groups. See Figure 4.1 for the revised version of the EM/S Model that was actually tested.[3]

Figure 4.1 Revised Overall Three Component Model of EM/S Surveillance for Predicting Panoptic Effects for Social Communication in the Workplace.



Model Changes to Comply with SEM Testing

Due to testing limitations inherent to the SEM application, three variables were removed to comply with the testing parameters. These three variables, comfort with communication technology, experience with communication technology, and enforcement of EM/S policies, were highly correlated ($r \geq .71$) with other variables in the model. High correlations ($r \geq .70$) will prevent any testing of the model. In addition to this correlation issue, both comfort and experience with communication technology were also previously shown to have no significant impact on the communication technology component of the model. As such, there was ample justification to remove them. As for enforcement of EM/S policy variable, both this variable and the policy type variable sought to explain the type of policy present within the organization. The model results indicated that the two variables were not significantly different from one another. Of these, only one, policy type, was kept in the model to avoid the high correlation limitation of SEM. While both were significant contributors, the variable of policy type was chosen because it more closely parallels other variables in the model looking at employee perceptions rather than observations as in the case of the enforcement variable.

Model Changes Resulting from Preliminary Testing

Through preliminary testing of the model, variables with non-significant path coefficients were removed from the model. This included perceived management style, which was shown earlier to be a non-significant contributor to the organization factors

component of the model. In addition, the outcome variables of perceived job performance and perceived social communication opportunity were also removed after initial tests of the model for the same reasons. Once these variables were removed, the remaining 10 variables in the model were tested.

EM/S Model without Surveillance Concern Moderator

The first test of the adjusted EM/S model was conducted without the surveillance concern moderator. In this model (see Figure 4.2), 10 variables were entered into the SEM application, which resulted in nine significant path coefficients. In general, the model fit indices indicate that the model does not adequately provide sufficient explanation of the relationships tested. The χ^2 statistic was affected by the large sample ($n = 173$), resulting in a poor fit ($\chi^2 = 400.82$, $p \leq .001$, $df = 36$). Because of the large sample and its effect on χ^2 results, two other fit indices were used to validate the model. First, the comparative fit index (CFI) was determined followed by the standardized root mean-square residual (SRMR). Hu and Bentler (1999) recommend that, if both the CFI $\geq$ .96 and the SRMR $\leq$ .10, the model should be retained. In the case of this model, neither criterion was met (*CFI* = .40, *SRMR* = .24). In addition, the model resulted in a Chronbach's α of only .46, well below the .8 level typically expected in research of this type.

EM/S Model with High Concern Moderator

The second test of the adjusted EM/S model was conducted with the high concern moderator. This was accomplished by dividing the sample based on their surveillance concerns variable score. Those with an overall mean score of 1.0 to 4.0 were categorized as high concern, while those with mean scores greater than 4.0 were categorized as low concern. In this model (see Figure 4.3), the same 10 variables were entered into the SEM application resulting in eight significant path coefficients. In general, the model fit indices indicate that the model does not adequately provide sufficient explanation of the relationships tested. However, most of the path coefficients were stronger in this model. The χ^2 statistic was again affected by the large sample ($n = 79$), resulting in a poor fit ($\chi^2 = 216.71$, $p \leq .001$, $df = 36$). Because of the large sample and its effect on χ^2 results, the CFI (.42) and SRMR (.26) indices were calculated. In the case of this model, neither criterion was met. In addition, the model resulted in a Chronbach's α of only .40.

EM/S Model with Low Concern Moderator

The final test of the adjusted EM/S model was conducted with the low concern moderator. In this model (see Figure 4.4), the same 10 variables were entered into the SEM application resulting in seven significant path coefficients. In general, the model fit indices indicate that the model does not adequately provide sufficient explanation of the relationships tested. In this model, most of the path coefficients were weaker with the

Figure 4.2 Results from Structural Equation Modeling Testing of Overall Model without Surveillance Concern Moderator.

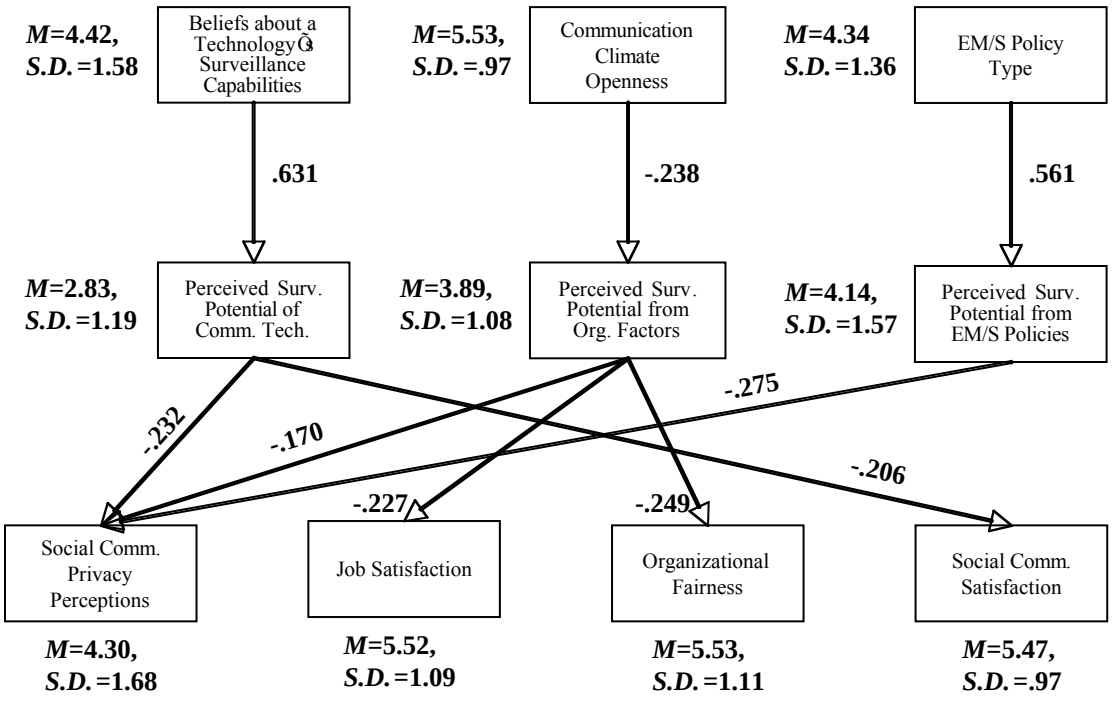
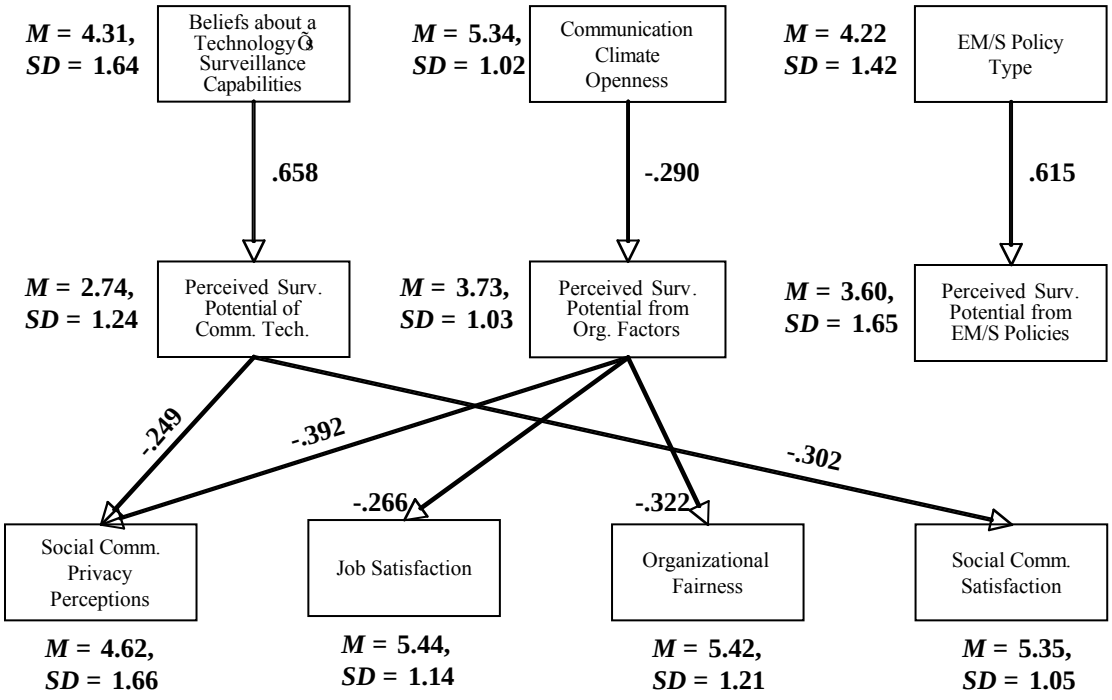


Figure 4.3 Results from Structural Equation Modeling Testing of Overall Model with High Surveillance Concern Moderator.



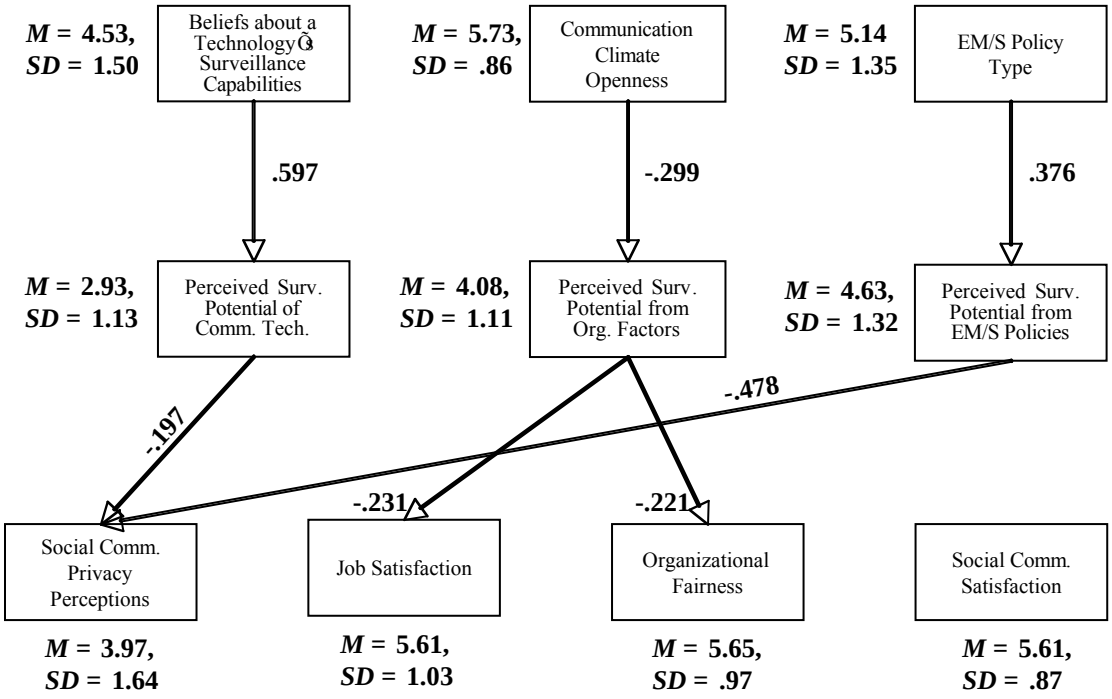
main exception being the relationship between the surveillance potential from EM/S policies and social communication privacy perceptions (-.478). The χ^2 statistic was again affected by the large sample ($n = 94$), resulting in a poor fit ($\chi^2 = 196.67$, $p \leq .001$, $df = 36$). Because of the large sample and its effect on χ^2 results, the CFI (.40) and SRMR (.23) indices were calculated. Again, neither criterion was met. In addition, the model resulted in a Chronbach's α of only .39.

POST HOC ANALYSIS/TESTING

Potential Reaction Behaviors

As part of the overall research, participants were given a list of 15 potential reactions to communication surveillance in the workplace plus an option to add in one of their own (see Table 3.6 for overview). These potential reactions were gathered as another way to tap into additional behavioral data beyond the survey questions. Here, respondents were categorized into 4 groups: (a) no activity group, (b) low activity group behaviors (1-3 reported behaviors), (c) moderate activity group (4-6 reported behaviors), and (d) high activity group (7-16 reported behaviors). This categorization created three approximately equal groups based on percentages along with a no behavior group. Following this categorization, a post hoc analysis using a oneway ANOVA with Tukey's HSD analysis was performed comparing potential reaction behaviors to the six outcome variables.

Figure 4.4 Results from Structural Equation Modeling Testing of Overall Model with Low Surveillance Concern Moderator.



Results indicated two significant ANOVA scores for the variables of social communication privacy perceptions, $F(3, 299) = 4.11$, $p \leq .01$, and social communication satisfaction, $F(3, 298) = 2.99$, $p \leq .05$. Here, the Tukey's HSD post hoc test indicated significant differences for parts of both variables.[4] For social communication privacy perceptions, significant differences were shown between those in the 'No Activity ' and 'Moderate Activity' conditions ($p \leq .05$) and those in the 'No Activity' and 'High Activity' ($p \leq .01$) conditions, where those in the moderate and high groups perceived more privacy. As for social communication satisfaction, significant differences were found between the "No Activity" and "High Activity" ($p = \leq .05$) conditions. Overall, individuals in the high activity behavior group had significant differences (lower scores in both cases) in social communication privacy perceptions and social communication satisfaction, than those who reported no potential reaction behaviors.

Post-Survey Interviews

Seven post-survey interviews were conducted in an attempt to get a general sense of the impact of surveillance on social communication in the workplace. There were four primary questions, one with a potential follow-up item, and a final wrap up question. The first question sought to understand the general level of concern that individuals have about the surveillance of social communication in the workplace. The overwhelming response by all but one of those interviewed was that they had either no concern whatsoever, or very little concern. Some of the explanations for these responses included "I don't do (social communication) at work" to "The organization has the right to do

(surveillance) at work." The one exception noted that his concern had elevated since participating in the survey. The organization involved is a government defense contractor and the environment in question is a military installation. This person reported a sharp increase in the amount of surveillance, both of military and civilian employees. However, the participant felt that for the most part the changes were appropriate considering the sensitive nature of most of the work that was being done.

When asked about the extent of their concerns using various communication technologies that may or may not be surveilled, again there was uniformity to the response. None of them reported any concerns regarding the surveillance of the various communication technologies. Explanations for these responses varied from "The emphasis here is trust in our coworkers. We are told what is appropriate and are left alone for the most part," to "I'm not doing anything wrong and therefore I have no concerns."

Next, interview participants were asked if there was anything about their working environment that influences the amount of surveillance perceived in the workplace. Here with the exception of the government contractor working at a military installation, most responses indicated that there was little about their environment that influenced the amount of surveillance they perceived. Some explanations noted that the organizations were generally not that concerned with surveillance unless there was a specific requirement for it (one respondent worked for a financial institution and reported that some communication is monitored because it was required by federal law).

Finally, participants were asked about their organization's efforts to keep them informed about the use or potential use of surveillance of social communication in the workplace. Here the responses fell into two general categories. First, all reported that their organization does a good job communicating the surveillance practices of the organization. Second three of the participants went further to note the importance of training, both for new employees and current employees, on the company's use of surveillance and the capabilities of such systems.

Overall, the interview data revealed that surveillance concern in general is not that big of an issue in the minds of at least these organizational members. Moreover, this lack of concern seems to extend to the communication technologies involved. There is a feeling among some of the respondents that it is their organization's right to monitor. As for environmental influences, these do seem to be present within these organizations, though many are aware that surveillance does take place. Finally, at least these organizations seem to be doing a good job of keeping their employees informed as to the use or potential use of communication surveillance in the workplace.

REVIEW

Overall, there were mixed results for the hypotheses and research questions tested in this chapter. Primarily, the supported hypotheses dealt with relationships in the upper portion of the model dealing with elements impacting the surveillance potential of the three primary model components of communication technology, organizational factors, and EM/S policies. As for the lower half of the model, only two outcome variables, social

communication privacy perceptions and organizational fairness, indicated overall significant relationships with the model. As for the model itself, results indicated that while significant relationships within the model do exist, the overall fit of the model, regardless of the surveillance concern moderator, is not sufficient enough to validate the model. Next, post hoc analysis of potential reaction behaviors and the outcome variables points to some interesting potential explanations of how employees react when it comes to lower levels of both social communication privacy perceptions and social communication satisfaction. Finally, the post-survey interviews provided some interesting perspective and possibly shed some light on the variable of surveillance concern.

In the following chapter, the results presented in this chapter will be discussed. Next, the impact of these results on the current body of research will be covered. In addition, the strengths and limitations of this research will be examined as well as future directions for this line of research will be offered.

Endnotes

[1]Due to the exploratory nature of the current research and the number of primary outcome variables being assessed, there may have been a need for a Bonferroni Correction to adjust for multiple comparisons. This was not done for two reasons. First, the number of outcome variables assessed, six, was considered to be a reasonable amount to test. Second, even with the correction, only one outcome tested was potentially affected by the correction (Social Communication Privacy Perceptions). The results after the correction were not significant, as the significance level of $p \leq .0083$ was not achieved.

[2]Additional regression analysis was run which looking at the impact of the face-to-face weekly usage variable. The face-to-face variable was entered along in Step 1 of the regression models looking at experience, comfort, and beliefs about a technology's surveillance capabilities. No significant differences were found between the results of these regression models and those where face-to-face usage was not included. Beliefs about a technology's surveillance capabilities were still the only significant variable.

[3]Two additional revised models were tested. The first placed the variable of Social Communication Privacy Perceptions as a mediating variable with the remaining three outcome variables. The second placed the variable of Organizational Fairness in a mediating position with the remaining three outcome variables. Neither model demonstrated any significant improvements over the revised model reported here.

[4]Because the unequal group sizes involved in the ANOVAs, a Levene's Test for Equality of Variances was computed resulting in a significant score (2.75, $p \leq .05$), indicating that the variances of the two groups are significantly different. Thus, the possibility for a Type I Error is present. When the social communication satisfaction variable relationship is examined, the Levene test resulted in a non-significant score (1.68, $p > .05$), indicating that the variances between the groups is similar and that Type I Error is not an issue.

Chapter 5 – Discussion

Chapter 4 reported the results from the study of the impact of electronic monitoring and surveillance (EM/S) on a variety of organizational outcome variables. The results generally indicated support for the hypothesis that beliefs about a communication technology's surveillance capabilities impact the level of perceived surveillance from that technology. Support was also found for the prediction that decreases in communication openness would lead to an increase in perceived surveillance potential from organizational factors. Additionally, strong support was found for the hypotheses suggesting that greater clarity about the existence and enforcement of a right-to-monitor policy leads to increases in the level of perceived surveillance potential from organizational EM/S policies. Furthermore, generally strong support was shown for the prediction that increases in the overall panoptic effect potential resulted in decreases in perceived social communication privacy (of the three primary components, the panoptic effect potential from both communication technology and EM/S policies was found to be significant here). Finally, the results suggest that as panoptic effect potential increases, there will be a corresponding decrease in perceived organizational fairness (of the major components of the EM/S model, only the panoptic effect potential from organization factors was significant here).

This chapter will discuss and interpret how these findings, and the lack of significant findings for other hypotheses, add to the overall literature on monitoring and

surveillance in the workplace. The chapter will begin with an interpretation of the results along with a presentation of the associated conclusions. Next, the contributions of this research to the literature will be presented. A look at the practical implications of this research will follow. Subsequently, a number of key strengths and limitations of the current research will be offered. Finally, the chapter will conclude with a brief look at the future directions for research into electronic monitoring and surveillance in the workplace.

INTERPRETATIONS OF RESULTS AND CONCLUSIONS

This section of the chapter will cover each of the results of the hypotheses and research questions in the order they were tested. This will be followed by a discussion of the model testing and the post-hoc analyses. Following a brief discussion and interpretation of the findings for each of the items, conclusions are offered. Table 5.1 provides a list of all conclusions generated from this study.

Communication Technology Elements

Frequency of Use

This hypothesis posited that increased frequency of use of a communication technology would lead to a decrease in the level of perceived surveillance from that communication technology. Results from testing each of the four communication technologies (telephone, voicemail, e-mail, and instant messaging) utilized in this

research indicate there is no support for this hypothesis. In fact, the data indicate the relationship may actually be opposite of this prediction (though results are not statistically significant). In contrast to supporting rationale from Timmerman's (2002) work on mindlessness and mindfulness in channel selection, this may not matter here at all. Rather than being mindless of the amount a particular channel is used, individuals may use whatever communication technology is appropriate for a particular type of communication regardless of the surveillance potential of that communication technology. In other words, individuals may have accepted ways of communicating in their working environment and they purposely select the most suitable technology for the task. Additionally, increased use of a particular communication technology may lead to greater awareness of the capabilities of that particular technology, including any possible surveillance features. From this perspective, the knowledge they have regarding surveillance and a particular tool may minimize their concern so that they may go about their business as usual. Another tentative explanation is that this variable is to general in nature to find any links with surveillance potential. This may be due to the fact that individuals are constantly using technology without any regard for surveillance or any other particular reasons outside general necessity or job requirements. Thus, we can tentatively conclude the following: *There is no indication that the frequency of use of a communication technology has any influence on the amount of surveillance potential perceived from that particular communication technology.*

Comfort Level

The second portion of the first hypothesis offered that increases in comfort with a particular communication technology would lead to decreases in perceived surveillance capabilities from that technology. Results from testing these same four technologies indicate there is no support for this hypothesis. There were no consistent or significant results for any of the four communication technologies studied. What may be occurring in this case is that comfort with a communication technology increases steadily overtime, regardless of the issue of surveillance in the workplace. Again the level of comfort with a technology is too general a variable to have a direct relationship with surveillance. Surveillance, in essence, is not an important consideration or issue in communication technology comfort in this situation. Here, individuals focus the communication technology choices on other variables (i.e. appropriateness, speed, richness, etc.) Additionally, the mean scores of for comfort were generally very high. This may indicate that there may not be enough variance in the comfort variable to accurately assess the impact of surveillance, pointing to the need for a more accurate measure of this variable. Based on these results, the following conclusion is made: *There is no indication that an individual's comfort with the use of a communication technology has any influence on the amount of surveillance potential perceived from that particular communication technology.*

Experience

The next hypothesis in this portion of the research proposed that as the experience level with a communication technology increases, the level of perceived surveillance potential would decrease for that technology. Results of the testing of this hypothesis using the four technologies used in this project indicate there is no support for this hypothesis. There were no consistent or significant results for any of the four communication technologies studied. Again, similar to the results for frequency of use and comfort with a communication technology, experience seems unrelated to the perceived level of surveillance from a communication technology. Once more, while the idea of mindless use of technology (Timmerman, 2002) was thought to be a rationale for this hypothesis, clearly, this is not the case. Here individuals rely on their experiences with the technology and other factors such as who they are communicating with, the importance of, and timeliness of the message. Experience levels across all four communication technologies were high. Here, individuals may be making choices without regard for their general experience because it appears to be consistent across technologies. As noted with the two previous communication technology predictors, experience may just be too general a variable to have any direct consequence for surveillance, again pointing to the need for a more accurate measure of this variable. To this end, the following conclusion is made: *There is no indication that an individual's experience with the use of a communication technology has any influence on the amount of surveillance potential perceived from that particular communication technology.*

These consistent non-findings may indicate that surveillance does not readily factor into an individual's decision-making process when it comes to communicating via technology in the organizational setting. The fact that frequency, comfort and experience were not found to be significantly related to surveillance potential could indicate a possible lack of choice of whether or not they use a particular technology or the presence of an accepted standard of communication within an organization. Additionally, it may indicate that users become both more experienced and comfortable with communication technology independent of the fact that it could or is used as a surveillance tool. Finally, it may be that these three variables are to general in nature to be of use in predicting surveillance potential from communication technology. Overall, it just does not seem to matter as surveillance can or does occur with communication technologies that we are experienced with and new to, that we feel comfortable using as well as feel less comfortable, and that we use frequently as well as less so.

Beliefs about Surveillance Capabilities

The final hypothesis in the Communication Technologies element of the research model predicts that as the belief that a communication technology could be utilized for EM/S increases, the level of perceived surveillance potential of that communication technology will increase. As noted in Chapter 2, this variable was based on one of Botan's (1996) untested elements of his panoptic effects model. Results of the testing of this hypothesis indicate, across all four communication technologies, strong support for this hypothesis. The results were especially strong for the two computer-mediated

technologies—e-mail and instant messaging. As predicted, individual beliefs about a technology and its surveillance capabilities appear to be an important factor in the perceptions of surveillance potential from that technology. This could be a result of individual experience with surveillance issues with a particular communication technology. They, or their coworkers, may have received notice or warning regarding the surveillance and use of particular technologies. Also, their responses may be influenced by what they read or see in the media regarding the use of or advances in surveillance technology. Thus, the following conclusion is presented: *Employee's beliefs that a communication technology could be used to monitor/surveil were shown to be positively linked to increased levels of perceived surveillance potential from that particular communication technology.*

Organizational Factors

Perceived Communication Openness

One half of this hypothesis offers that as the nature of an organization's perceived communication climate becomes less open, the level of perceived surveillance potential from organizational factors will increase. Results from the analysis of this hypothesis indicate strong support. As predicted, the lack of perceived communication openness in an organization can lead to increased perceptions about surveillance in the workplace. Here, it may be that individuals perceive the lack of openness as a control mechanism utilized by management in the same vein as the use of EM/S. Organizations may use a

strict communication environment to limit the amount of social (non-task) communication occurring in the workplace. This emphasis may lead employees to perceive more potential for surveillance as the organization has made it clear what type of communication it wants to see and will allow in this environment. To that end, the following conclusion is forwarded: *When employees perceived a less open communication environment within an organization, perceived levels of surveillance potential from organizational factors also increased.*

Perceived Management Style

The second part of the second hypothesis posits that as the nature of an organization's perceived management style becomes more autocratic, the level of perceived surveillance potential from organizational factors will increase. Results from the testing indicate there is no formal support for this hypothesis; however it should be noted that the results did approach significance ($p \leq .08$) and were in the direction predicted in the hypothesis. Additionally, the two items were significant correlated ($r = .17$, $p \leq .01$) suggesting that there is a modest relationship involved. These results may have been impacted by a strong correlation between the two organizational elements (thus, management style did not add significant explanation to perceived surveillance potential from organizational factors beyond that accounted for by communication climate). As additional evidence of the importance of management style, it was also highly correlated (more so than communication climate) with two of the outcome variables in the overall EM/S model: (a) job satisfaction ($r = -.42$, $p \leq .01$), and (b)

organizational fairness (r = -.50, $p \leq .01$). These correlations may indicate that this variable has greater predictive strength with traditional organizational variables than it does with surveillance issues. As a result, the following conclusion is offered: *When employees perceived a more autocratic management style within an organization, perceived levels of surveillance potential from organizational factors also increased.*

EM/S Policies

Type of EM/S Policies

The first hypothesis from the EM/S policy component of the current research proposes that as the beliefs about the type of EM/S policy indicate a right-to-monitor policy, the level of perceived surveillance potential from EM/S policies will increase. Results from the analysis of this hypothesis indicate strong support. As predicted, as individuals perceive or understand that the EM/S policy of an organization is a more right-to-monitor policy, rather than a hands-off policy, the perceived level of surveillance from EM/S policies increases. This may come as a result of an understanding of the particular policy in question. Individuals may understand both the nature and purpose of the policy and the means by which an organization will carry out the policy. This clarity about the policy may put the idea of surveillance front and center in the employee's thought process. Furthermore, this indicated that the perceived relationship between right-to-monitor policies and the use of surveillance is quite strong. The fact that an organization has a right-to-monitor policy may be enough to increase an individual's

surveillance perceptions, regardless if surveillance occurs or not. Based on these findings the following conclusion is presented: *When an organization's EM/S policy increasingly indicates a clear right-to-monitor perspective, the perceived surveillance potential from organizational EM/S policies also increased.*

Enforcement of EM/S Policies

The second part of the third hypothesis suggests that as the beliefs about the enforcement of an organization's EM/S policy clearly indicate a right-to-monitor policy, the level of perceived surveillance potential from EM/S policies will increase. As with the first half of the hypothesis, the results indicate strong support for this prediction. As expected, enforcement of an EM/S policy, when it indicates that the policy is more of a right-to-monitor view rather than a hands-off one, will result in an increase in the perceived level of surveillance potential for EM/S policies. This suggests the importance and impact of witnessing an organization's EM/S policy in action, whether that takes the form of warnings, disciplinary actions, or the overt use of surveillance technology in the organizational environment. Rather than simply perceiving that surveillance may be occurring because an organization has a right-to-monitor policy, witnessing the enforcement of such a policy may remove any potential doubts that any employee has about whether or not they are being surveilled. In this case, surveillance goes from an abstract concept to becoming a hard reality of the organizational environment that can no longer be ignored. It should be noted again that of the two EM/S policy elements tested, the enforcement element has a slightly higher beta coefficient, though it was not

significantly different from the type of policy element. Both appear to be strong predictors of surveillance potential from EM/S policies, indicating that both an understanding of a policy and witnessing the policy in action have an impact on the individual. Therefore, the following conclusion is offered: *When an organization increasingly enforces its right-to-monitor policy position, the perceived surveillance potential from EM/S policies also increased.*

Outcome Variables

Perceived Social Communication Privacy Perceptions

The fourth hypothesis offers that as the overall panoptic effect potential from communication technologies, organizational factors, and EM/S policies increases, the perceived level of social communication privacy perceptions will decrease. Additionally, it was predicted that of the three panoptic effect potential components, the impact from EM/S policies would be the largest. Results indicate strong support for these hypotheses. As predicted, the overall model was significant, and only the panoptic effect potential from organization factors was not a significant individual predictor (and even this component approached significance, $p \leq .06$). Just as Duvall-Early and Benedict (1992) noted the need for individual privacy and Botan (1996) found that workers felt a lack of it, the current findings seems be in line with earlier research. With the increased presence of surveillance, employee privacy appears to be reduced. Also as predicted, the panoptic effect potential from EM/S policies had the largest impact in the model; however, it was

not statistically different from the panoptic effect potential found for communication technologies. These results may indicate the importance of an EM/S policy in an organization and the potential impact it may have on the social communication privacy concerns of employees. These EM/S policies may represent the only direct and open indication in an organization that surveillance may be occurring. Additionally, the strong results from the panoptic effect potential from communication technology also point to the importance of the social communication privacy concerns with communication technology in the workplace. One potential explanation for this outcome could be that individuals are aware of the dual capabilities of the technology (communication and surveillance) and that awareness impacts the amount of privacy they perceive. As was seen earlier, individual beliefs about a technology's surveillance capability had a strong impact on the potential for surveillance from that technology. These beliefs may continue to manifest themselves as concern for their privacy in this situation. However, how this awareness translates into other outcomes is not as clear. To this end, the following conclusion is presented: *A perceived increase in the overall panoptic effect potential from communication technologies, organizational factors, and especially EM/S policies was linked with reduced levels of perceived social communication privacy in the organization.*

Perceived Social Communication Opportunity

Hypothesis 5 forwards that as the overall panoptic effect potential from communication technology, organizational factors, and EM/S policies increases, the amount of perceived social communication opportunity in the workplace will decrease. In

addition, the panoptic effect potential from communication technology was predicted to have the largest impact on this outcome. Results and analysis indicate there is no support for either part of this hypothesis. Although the data did indicate that the relationships predicted were in the correct direction, none were significant. As noted with some of the earlier hypotheses that were also unsupported, it is possible that individuals do not make a connection between the perceived opportunities for social communication in the workplace and any impact surveillance might have. As such, workplace surveillance may represent an abstract construct to individuals, who, unless they come face to face with overt signs of surveillance, do not allow it to interfere with or affect their normal routine. In addition, there may be other outlets for social communication that supplements what may be lost due to surveillance of the communication technologies. Short face-to-face social conversations at the water cooler or copy machine could be providing the needed opportunities for social communication that they might not otherwise have through the monitored/surveilled communication technologies. Individual may save their social communication for appropriate times during the workday (i.e. lunch breaks) or before or after work hours, where management or organizational policies do not apply. As a result, the following conclusion is made: *There is no indication that the overall perceived panoptic effect potential from communication technology, organizational factors, and EM/S policies has any influence on the amount of perceived social communication opportunity in the workplace.*

Perceived Job Satisfaction

The sixth hypothesis posits that as the overall panoptic effect potential from communication technology, organizational factors, and EM/S policies increases, the perceived amount of job satisfaction will decrease. Furthermore, a related research question sought to determine which of the three major components had the largest impact on the outcome of job satisfaction. Results of the analysis indicate there is no support for the hypothesis and no clear answer to the research question. None of the three main components revealed any significant relationships, though again, all of the relationships were in the predicted direction. These results may indicate that unless surveillance has a strong overt presence in an individual's work life, it may not be perceived as an important factor in determining perceived job satisfaction or a number of the outcome variables tested in this research. As Chalykoff and Kochan (1989) noted, it may not be the presence of surveillance that affects job satisfaction, but how it is used. Here, if individuals perceive the surveillance being conducted is for valid reasons (i.e. legally required), then the impacts of surveillance could be minimized. However, it should be noted that the relationship with organizational factors did approach significance ($p \leq .07$). The often-transparent nature of monitoring/surveillance of communication technology could lessen some of the direct impacts that surveillance may have on individuals; whereas, variables related to organizational factors often have a visible dimension. As was noted earlier, variables such as perceived management style and perceived communication climate were highly correlated with perceived job satisfaction ($r = .44$, p

≤ .01) indicating that the organizational factors may play a more direct role with job satisfaction (and exert only some indirect influence via perceived surveillance potential from these organizational factors). Again, this could be the result of observable phenomena from the individual's perspective. Individuals may perceive management style, or the openness of communication in an organization as having a more direct link to social communication opportunity than does surveillance. From these results, the following conclusion is offered: *There is no indication that the overall perceived panoptic effect potential from communication technology, organizational factors, and EM/S policies has any influence on the amount of perceived job satisfaction.*

Perceived Social Communication Satisfaction

Hypothesis seven proposed that as the overall panoptic effect potential from communication technology, organizational factors, and EM/S policies increases, the perceived amount of social communication satisfaction will decrease. Furthermore, a related research question sought to determine which of the three major components had the largest impact on the outcome of perceived social communication satisfaction. Results from the analysis indicate there is no support for this hypothesis, nor is there a clear answer to the research question. Similar to the previous results from the perceived job satisfaction variable,[1] even though none of the main components of panoptic effect potential were significant, the relationships were all in the predicted direction. One potential explanation for this result could be that individuals may be evaluating their communication satisfaction independent of the method of communication. For example,

if they utilize face-to-face communication as their primary social communication outlet and they perceive a general satisfaction with this communication, then regardless of the potential for surveillance of the various communication technologies, surveillance would not have a strong effect on the individuals overall social communication satisfaction. Face-to-face communication did rank as one of the top three methods of communication based on typical week usage (see Table 3.4) indicating that it is an important part of the normal communication practices of the respondents and could be the source of their social communication satisfaction. To this end, the following conclusion is presented: *There is no indication that the overall perceived panoptic effect potential from communication technology, organizational factors, and EM/S policies has any influence on the amount of perceived social communication satisfaction.*

Perceived Job Performance

The final hypothesis offers that as the overall panoptic effect potential from communication technology, organizational factors, and EM/S policies increases, the overall perceived level of job performance will decrease. Furthermore, a related research question sought to determine which of the three major components had the largest impact on the outcome of perceived job performance. Results of the analysis indicated no significant relationships among any of the three model components. One potential explanation for this is that employees do not take surveillance into consideration when thinking about job performance. In fact there may be many other potential predictor variables that are of more importance. One possible example may be found in one of the

organizational factor variables from this research. Here, communication climate was correlated (r = -.33, $p \leq .01$), indicating a strong relationship with perceived job performance.

In addition to the explanation above, there are two potential methods artifacts that may be affecting the results. First, as has been noted a few times, surveillance may not play a large enough role in the thoughts of the average individual when looking at typical organizational variables such as perceived job performance. Second, the relatively high scores for job may indicate an inherent problem with this part of the data set. Typically job performance is evaluated via third party observation and not through self-assessment. This self-assessment procedure may not have provided a reliable set of data with which to work. As a result, the following conclusion is made: *There is no indication that the overall perceived panoptic effect potential from communication technology, organizational factors, and EM/S policies has any influence on the overall level of job performance.*

Perceived Organizational Fairness

The final outcome variable was examined through the use of two research questions. The first question sought to determine the impact of the overall panoptic effect potential from communication technology, organizational factors, and EM/S policies on the perceived level of organizational fairness. The follow-up research question sought to determine which, if any, of the three major components had the largest impact on this outcome variable. Results of the analysis indicate that there is a significant overall

panoptic effect on the perceived level of organizational fairness. However, only one of the three major components, organizational factors, was shown to have a significant relationship. This relationship points towards a decrease in overall perceived organizational fairness when the panoptic effect potential from organizational factors increases. One potential explanation for these results could point to the fact that, though there may not an impact on satisfaction or performance, EM/S in the workplace is seen as unfair in general. In other words, they may be aware of what EM/S is and do not let it directly affect how they do their job or feel about their performance, but nonetheless, they have an opinion on the matter and see the practice as unfair. The fact that the strongest (and only significant) effect came from organizational factors may reside in an individual's perception of their environment. Individuals may see the use of surveillance similarly to the presence of an autocratic management style and/or a closed/restricted communication environment–all of which are seen as unfair. This could be a cultural artifact based on the general belief that individuals have an inherent right to privacy. As such, the following conclusion is made: *The overall perceived panoptic effect potential from communication technology, EM/S policies, and especially organizational factors was linked with lower levels of perceived organizational fairness.*

Perceived Surveillance Concern Moderator

With the testing of the lower portion of the model (Hypotheses 4 through 8 and Research Questions 1 through 5), the introduction of the moderating variable of perceived surveillance concern was introduced. Across the six outcome variables, the

impact of the moderator was mixed. For the variables of perceived social communication opportunity, perceived job performance, and perceived organizational fairness, perceived surveillance concern was not significant in either step of the regression models used. Thus, concern about surveillance of social communication in the organization has no apparent impact on these variables. Curiously however, the moderating variable of perceived surveillance concern was significant in regression models for both job satisfaction and social communication satisfaction. However, the moderator was only significant in Step 2 when the main three components were added into the regression model (though as noted earlier, none of these components had significant beta coefficients in the regression model). This may indicate that perceived surveillance concern only plays a role in the process when individuals perceive some relationship between surveillance and an outcome variable. It was only with the outcome of privacy perceptions, that the surveillance moderator was significant in Step 1. However, when the other three components of the regression model were added in Step 2, surveillance concern was no longer a significant predictor. Here, the direct relationship appears to be of more importance / significance than when surveillance concern is in the moderator variable role. This could be a potential interesting effect where comfort with surveillance results in decreased levels of privacy. One potential explanation of this could be that individuals either recognize the need for surveillance or have accepted the explanation for the use of surveillance provided by management. Despite this acceptance, they recognize that the use of surveillance does reduce their privacy in the workplace.

Electronic Monitoring and Surveillance Model

Overall Model

The three component model for predicting panoptic effects first presented in Chapter 2 (see Figure 2.2) and then revised for testing (see Figure 4.1) attempted to provide a way of explaining the elements comprising panoptic potential in an organizational environment and the potential impact they may have on both social communication and traditional organizational outcome variables. Structural equation model testing of this model did not adequately provide sufficient explanations of the relationships tested. While there were a number of significant path coefficients, the overall model (see Figure 4.2) was not significant.

When comparing the model results with the testing results of the hypotheses and research questions, there are a number of consistencies. First, beliefs about a technology's surveillance capabilities had a very strong path coefficient in line with the proposed hypothesis. Next, the effects of communication climate on perceived surveillance potential also had a strong path coefficient in the direction predicted by the hypothesis. Third, the type of EM/S policy, as predicted by the hypothesis, had a very strong path coefficient in the model.

When looking at how the outcome variables faired in the model, the results were similar, though not always the same relationships identified in the hypothesis testing. While only the panoptic effects from communication technologies and EM/S policies were found to be significant predictors of privacy concerns, the model indicated strong

path coefficients for all three components. With the organizational factors component approaching significance in the hypothesis testing and with a significant path coefficient in the model, this would indicate that this is an important component when predicting privacy perceptions.

Comparing the results of the hypothesis and model testing for the social communication opportunity variable yielded similar results as no significant relationships were identified. For the variable of job satisfaction, while no significant relationships were found in the hypothesis testing, there was a significant path coefficient for organizational factors. As with the privacy perception testing, organizational factors did approach significance with the job satisfaction variable as well. Looking at the social communication satisfaction variable, even though there were no significant findings for the hypothesis testing, the path coefficient for communication technologies was significant and in the direction predicted. Next, though there was one very weak relationship between job performance and the panoptic effects from organizational factors, the model results indicated no significant paths. Here, despite the significance, the weak relationship may not have provided enough explanation to survive in the overall model when other variables were taken into consideration. Finally, in line with the results of the research question testing for organizational fairness, the panoptic effect potential from organizational factors had a strong path coefficient in the same direction.

Overall these results indicate that there are some panoptic effects as indicated by the significant path coefficients. However, this effect may not directly translate into

noticeable changes in the both social communication and traditional organizational outcome variables tested here and could point to the absence of other key variables in the overall model. Further testing of these panoptic effect variables with new predictor and outcome variables may yet yield a significant model and other significant relationships related to EM/S in the organization. In addition, the inability to include the proposed objective components of the model may have weakened the predictive ability of the overall model.

Model Moderated by Perceived Surveillance Concern

Following the completion of testing for the overall model, the moderating variable of perceived surveillance concern was added in to test for differences. As with the overall model, the models with high surveillance concern (see Figure 4.3) and low surveillance concern (see Figure 4.4) did not adequately provide sufficient explanation of the relationships involved. However, there were distinct differences in the two models when comparing the strengths of the path coefficients. These differences would appear to indicate that perceived surveillance concern does play a role in this panoptic effect model. Rather than playing an outcome role as Botan (1996) tested, perceived surveillance concern appears to affect how other outcomes are impacted by the panoptic effect. Perhaps more important than the significance of the model itself is a comparison of the mean scores of the model components in both the high and low surveillance concern conditions. With the exception of privacy perceptions, those in the

Table 5.1. *Conclusions from the Study.*

Conclusion #1	There is no indication that the frequency of use of a communication technology has any influence on the amount of surveillance potential perceived from that particular communication technology.
Conclusion #2	There is no indication that an individual's comfort with the use of a communication technology has any influence on the amount of surveillance potential perceived from that particular communication technology.
Conclusion #3	There is no indication that an individual's experience with the use of a communication technology has any influence on the amount of surveillance potential perceived from that particular communication technology.
Conclusion #4	Employee's beliefs that a communication technology could be used to monitor/surveil were shown to be positively linked to increased levels of perceived surveillance potential from that particular communication technology.
Conclusion #5	When employees perceived a less open communication environment within an organization, perceived levels of surveillance potential from organizational factors also increased.
Conclusion #6	When employees perceived a more autocratic management style within an organization, perceived levels of surveillance potential from organizational factors also increased.
Conclusion #7	When an organization's EM/S policy increasingly indicates a clear right-to-monitor perspective, the perceived surveillance potential from organizational EM/S policies also increased.

Table 5.1. *(continued)*

Conclusion #8	When an organization increasingly enforces its right-to-monitor policy position, the perceived surveillance potential from EM/S policies also increased.
Conclusion #9	A perceived increase in the overall panoptic effect potential from communication technologies, organizational factors, and especially EM/S policies was linked with reduced levels of perceived social communication privacy in the organization.
Conclusion #10	There is no indication that the overall perceived panoptic effect potential from communication technology, organizational factors, and EM/S policies has any influence on the amount of perceived social communication opportunity in the workplace.
Conclusion #11	There is no indication that the overall perceived panoptic effect potential from communication technology, organizational factors, and EM/S policies has any influence on the amount of perceived job satisfaction.
Conclusion #12	There is no indication that the overall perceived panoptic effect potential from communication technology, organizational factors, and EM/S policies has any influence on the amount of perceived social communication satisfaction.
Conclusion #13	There is no indication that the overall perceived panoptic effect potential from communication technology, organizational factors, and EM/S policies has any influence on the overall level of job performance.
Conclusion #14	The overall perceived panoptic effect potential from communication technology, EM/S policies, and especially organizational factors was linked with lower levels of perceived organizational fairness.

low concern condition had higher mean scores than those in the high concern condition for each of the other nine variables. Overall those with low surveillance concerns appear to see a greater potential for surveillance in each of the three areas of communication technology, organizational factors, and EM/S policies. Additionally, they perceived higher job satisfaction, social communication satisfaction and organizational fairness. However, they perceive less privacy in their organizations, though organizational members do not necessarily see this as problematic.

Post-Hoc Tests

Potential Reaction Behaviors to EM/S

Coopman (2003) noted that some employees reported performing certain actions in an attempt to protect their privacy at work, and the current study found similar results. Here, among the 15 potential reaction behaviors to surveillance and one open response item, respondents indicated that they had performed several of these behaviors and many reported performing more than one. The number of potential behaviors reported by an individual was then grouped into high, medium, and low activity groups. These groups were then compared to the outcome variables in the EM/S model to see if any relationships existed. Results indicated significant relationships among two of these outcome variables: (a) perceived social communication privacy perceptions, and (b) perceived social communication satisfaction.

Of the reported behaviors, the five most common were reported by at least a third of all respondents. First, password protecting the computer was the most common (61.2%) reported behavior. Here, individuals may feel that passwords provide a measure of security and privacy in the workplace, though it is unknown how effective passwords may be in each situation. Passwords may be a way of increasing perceived privacy. This behavior is followed by limiting social communication to certain times (46.3%) of the workday. Here, individuals may recognize the presence of surveillance as well as recognize the organization's right to monitor; therefore, they choose to take part in social communication during accepted times (i.e. breaks, lunch hour, etc.). The next three most common behaviors, purchase of a cell phone for personal calls/voicemail (39.4%), registering for a private e-mail account (39.1), and deleting files off of the computer to hide signs of personal use (33.6%), all seem to indicate evasion techniques to avoid monitoring and surveillance. Here, individuals are looking for ways to socially communicate, but do so in ways that may not be surveilled or that can be covered up. In essence, they are seeking ways to circumvent the normal communication process in the organization as regulated by monitoring and surveillance.

These actions may represent another aspect to perceived surveillance concern not previously recognized as employees attempt to circumvent certain aspects of surveillance by performing a variety of potential reaction behaviors. In effect, these reaction behaviors may symbolize a type of "relief valve" to minimize the panoptic effect of surveillance. These reaction behaviors, and in particular the number of different behaviors exhibited,

may represent a subconscious desire on the part of the individual to assert more control over their environment and protect themselves from certain aspects of surveillance in the workplace. The differences in the outcome variables of privacy perceptions and social communication satisfaction, when comparing the "no activity" vs. the "moderate activity" or "high activity" groups were significant indicating that individual may be exhibiting these behaviors in an attempt to secure more privacy in their workplace communications. This provides further support of the importance of surveillance concern in the overall research looking at panoptic effects in the workplace.

Post-Survey Interviews

The results from the post-survey interviews seem to indicate a couple of strong themes. First, perceived surveillance concern is not a major issue at these organizations from the perspective of the participants. Second, this lack of concern extends to the potential surveillance of communication technologies in the workplace. Third, there is very little about these organizational environments that influences the amount of surveillance these individuals perceive. Last, the participant's organizations are doing a good job of keeping their employees informed about the use or potential use of surveillance on social (non-task) communication. However, it should be noted that the mean perceived surveillance concern score for those interviewed ($M = 5.05$) was higher than the overall mean ($M = 3.98$) for this variable. This indicates that, in general, those interviewed had less concern overall compared to the overall sample.

Though only seven interviews were conducted, there are number of potential explanations for these responses. First, the lack of perceived concern for surveillance in general and of the communication technologies they use could be the result of the organizations' efforts to keep the employees informed. Additionally, some of the attitudes that denote that the organization has a right to monitor may indicate a pro-organization viewpoint of the participants. They see that they have a responsibility to do the work they are paid to do and not conduct non-task related activities unless allowed to do so within reasonable limits. Overall, these results do mirror some of the findings of the survey, but do not show the same variety of opinions, especially with the variable of perceived surveillance concern. Nonetheless, these findings are both interesting and provide a closer look at some key issues involved in this research area.

Although it is somewhat surprising that those with less perceived concern about surveillance may also perceive it as more potentially prevalent, this may lend support to a number of arguments. First, individuals who are concerned with EM/S in their organizations may see it as a normal part of the working environment in today's society. Second, although those who have a high concern about surveillance appear to have reduced privacy perceptions, it does not seem to impact either their perceived satisfaction, with the job or their social communication, nor their perceptions of organizational fairness. Again, they may believe that because they are doing their job properly and within organizational guideline, they have nothing to fear or hide from organizational monitoring and surveillance. Third, focusing on organizational fairness in

particular, individuals with low perceived surveillance concern may see EM/S as an organization's right and a normal part of doing business today. Here, they may view surveillance not as a tool for control, but a tool to insure optimum performance of the organization. In a competitive business industry, surveillance could help identify and eliminate unnecessary waste, such as the abuse of company time for social (non-task) communication (i.e., cyberslacking) or abuse of company property/systems such as the various communication technologies present in an organization. Finally, looking at the fairness relationship, those reporting low concern about surveillance may approve of its use because it creates a more equal working environment. Here surveillance is seen as a way to make sure everyone is contributing his or her fair share of the labor.

Looking at the overall results and with the interview responses in mind, it appears that there is an alignment to some degree in the perceptions individuals have with concern. Those that view surveillance in a positive way (i.e., they are comfortable with it) may perceive the potential for surveillance in all of the components, but will have no problems with this. However, if an individual views surveillance in a more negative light and as less acceptable, then they would perceive less potential for its use in the organization. This could suggest that individuals will conceptualize surveillance potential as something either good (positive) or bad (negative) and from here determine how surveillance will impact other variables such as those tested in this research. The findings, especially those dealing with surveillance concern, may also indicate a general misunderstanding on the part of individuals to comprehend what monitoring or

surveillance means. Does surveillance have negative and positive valance possibilities in the eyes of the average individual? This is unclear and should be a relationship of concern in future research on EM/S in the workplace.

KEY CONTRIBUTIONS TO THE RESEARCH / LITERATURE

Panoptic Effect Potential

Some of the ideas about the panoptic effect model were clearly supported in this research. The variables of beliefs about a communication technology, communication openness, clarity about and enforcement of an EM/S right-to-monitor policy all clearly influence the surveillance potential of their respective components in the current model. Yet, overall the panoptic effect, while present, appears to be a much more complex concept than conceptualized here and in existing literature. Additional factors and variables may be involved that have not been studied in prior or current research efforts. Additional outcomes of panoptic effect are also needed to better understand the impact of surveillance of communication in the workplace. The model itself, though not significant, has extended our knowledge of panoptic effects in the workplace by going well beyond the Botan (1996) model that inspired it. Rather than looking at four basic elements of panoptic effects (of which only one was tested), this model looked at several aspects of what impacts not only panoptic effects, but also the perceptions of surveillance individuals perceive from communication technologies, organizational factors, and EM/S policies. The significant coefficient paths clearly indicate some strong relationships

within the model. However, the failure to demonstrate an overall significance for the model also demonstrates that at the very least, this model is incomplete. This could be the result of many factors including: (a) missing variables not studied here, (b) failure to test the objective components/variables of the model, and (c) not fully comprehending the importance of surveillance concern as a moderator. Needless to say, much more work is needed to develop and test a more appropriate model.

Problematic Surveillance?

Privacy perceptions, although shown to be significantly impacted by surveillance, do not appear to be as problematic as may have been expected. Here privacy perceptions seem to be viewed somewhat independently of the other outcome variables. As noted earlier, those with less concern about surveillance, though perceiving less privacy overall as compared to those with high concern, had higher perceived satisfaction and organizational fairness. The possible importance of surveillance concern and the failure to link panoptic effects to most of the outcome variables points to the need for a different explanation. It may be that individuals are more aware that their privacy at work has decreased, but at the same time they may see a legitimate purpose for this surveillance and thus do not let it interfere with their work in general. Some possible examples of legitimate purposes may include: (a) legal requirements, (b) employee safety, (c) loss prevention/theft (in this case, time), and (d) protection of sensitive information. Some individuals may see surveillance as not all that bad or even quite good. They may see it as a way of making sure everyone is doing their fair share of the work or providing them

with documented proof of a key conversation or business agreement. From a theoretical standpoint, we need to consider more carefully why organizations surveil in the first place. The intent, especially if understood by the average employee or member, may help to clarify the impact of surveillance in the workplace. This could impact not only variables like surveillance concern, but organizational fairness as well. Intent/purpose of surveillance could be a key variable in future modeling efforts looking to understand panoptic effects.

EM/S Policies

One of the surprising results of the current research project was that organizational EM/S policies might not be as common as some previous research had found. Despite recent research by both the AMA, (*E-mail rules, policies and practices survey*, 2003) which reported that 75% had policies in place for e-mail use, and Scott (2001) who found that 60% of organizations reported some type of EM/S policy, the current research found somewhat different results. Here, approximately 41% had a policy of some type in place regarding EM/S in the organization. Even if the numbers reported for those individuals who reported they did not know if their organization had a policy were added to the total in both studies, the current research would still indicate that there were fewer organizations with an EM/S policy than in other reports. This is important, because often policies are the only way that individuals may learn of the existence of and extent of EM/S in the workplace. These policies typically spell out the rights of both the organization and the individual when it comes to the use of surveillance. These different

results could be the product of a diverse sample population that was geographically dispersed, composed of heterogeneous organizations varying in size, industry, and focus. Previous samples may have been affected by the lack of such diverse demographic qualities. This overall lack of policies or lack of knowledge of policies that individuals believe exist is problematic for both organizations and the individual. From a legal standpoint, the lack of a policy can make the use of EM/S in the workplace problematic at best under the current guidelines such as those from the ECPA. For individuals, the lack of a policy or lack of knowledge of policy leaves them without a clear understanding of what is acceptable behavior in the organizational environment as far as the use of communication technology for social communication is concerned.

EM/S Model

Communication Technology Component

While panoptic effects were found with all three of the components of the EM/S model, the effect from communication technology represented the weakest of these (M = 2.83), falling below the mid-point on the seven-point scale used. This indicates that the communication technology component may have less to do with panoptic effect potential than one might imagine considering the all of the surveillance capabilities inherent to today's communication technology. It may also point again to a lack of concern over these capabilities. Individuals may use these technologies regardless of the surveillance capabilities, but based more on traditional theories of use/selection such as media richness (Daft & Lengel, 1984, 1986), or social influence (Fulk, Schmitz, & Steinfeld,

1990), or mindful/mindlessness (Timmerman, 2000). As far as newer communication technologies, such as IM, are concerned, the use of these technologies in a dual communication / surveillance role will likely continue. Management could interpret the apparent lack of connection between technology and surveillance on the part of the individual employee as a green light to continue down this path of increased surveillance.

Organizational Factors Component

Although both management style and communication climate openness were highly correlated with the surveillance potential from organizational factors, only communication climate was shown to be a significant predictor. As noted earlier, the variable of management style did approach significance in the model predictions, but it did not contribute significantly beyond what was found and explained through the communication climate variable. Overall, the importance of the organization factors component lies primarily in its relationships with the traditional organization outcome measures of job satisfaction and organizational fairness. Here we are able to see the importance of both management style and communication climate on the overall environment in the organization and the impact from panoptic effects that they generate. These are important in the overall model because they demonstrate the impact of the organizational environment on perceptions of surveillance and the overall panoptic effects that are present in the model, going beyond any impacts that communication technology and EM/S policies may have. However, this is a double-edged sword in that the strong relationships identified may be even stronger when a direct link between the

organizational factors and the outcome variables is compared, removing the panoptic effect impact. In essence, organizational factors may be more important overall than panoptic effects as far as the tested outcome variables are concerned.

Organizational EM/S Policies

Both the presence of a right-to-monitor EM/S Policy and the enforcement of that policy are significant predictors of the panoptic effect potential from EM/S policies. This overall component represented the strongest of the three model components ($M = 4.14$). This indicated that EM/S policies are indeed an important component of research into panoptic effects. This is in line with what Botan (1996) offered in his research, though he did not test this at that time. Here, the importance of policies may, as noted earlier, lie in the fact that this is often the only way that individuals in an organization know about the presence and the extent to which surveillance may be used. Finally, the lack or uncertainty over the existence of an EM/S policy can be just as problematic. Here, individuals may be unaware that their social communication practices are considered unacceptable and may be monitored/surveilled by the organization, leading to some potentially negative consequences.

New Communication Technologies

Previous research (Scott, 2001) indicated that newer communication technologies, such as e-mail, were perceived as more private than older communication technologies such as the telephone. The current research found some evidence to the contrary. Results indicated that e-mail ($M = 6.38$) was believed to be the most likely of the communication

technologies researched to be monitored or surveilled. The three other technologies that were part of this study—telephone (M = 6.07), instant messaging (M = 5.92) and voicemail (M = 5.91)—had somewhat weaker, but still relatively strong perceived surveillance potential scores.

The continued increase in use of e-mail and its importance in organizational communication coupled with the fact that more and more individuals are becoming experienced users may account for these differences in study results. These results also indicate that individuals may be more aware of the various surveillance capabilities a particular communication technology possesses, independent of whether or not this has any direct impact on the individual. Studies and mainstream articles on the prevalence of the use of surveillance, especially with respect to the monitoring of communication in the organization, may be making the average individual more aware of both the presence of and technology utilized for EM/S.

The inclusion of instant messaging as a technology of interest in this research appears to have been valid decision. Though use in the organization is not as widespread as some popular literature suggests, IM's presence in organizational communication is being felt. Though not as common as the other three technologies studied in this project, there were a fairly substantial number of respondents who indicated IM use (30.2%). While the average weekly use compared to other technologies was relatively low (4.38%), there was a significant amount of variation with some respondents indicating that IM constituted approximately 89% of the average weekly communication channel

usage. With this in mind, further research is needed to study the growing impact of this and other new technologies as they enter the organizational environment. These new technologies represent not only cutting edge communication tools, but surveillance tools as well.

Finally, concerns over privacy and surveillance issues related to the September 11, 2001 attacks and the ongoing "war on terrorism," along with the implementation, continued use, and controversy surrounding the USA PATRIOT Act, may be bringing more attention to the subject. These issues may have been subconsciously placed front and center in the minds of the general public who may now be taking much less for granted in their lives.

Practical Implications

As was shown earlier, individuals believe that communication technology in general can be used for monitoring and surveillance within the organization, which in turn leads to an increase in the perceived potential that they are being monitored or surveilled. However, these results, while indicating strong negative impacts on privacy perceptions, also indicate little negative effects on other outcome variables. There are several implications for this finding. First, this indicates to management that the use of EM/S may be fine with employees particularly if management is open about the use and has a policy regarding that use. Second, employees may be more likely to accept EM/S if they know about it and there is a policy that sets the parameters for its use. Third, the importance of the creation and use of a policy regulating the use of and conditions where

EM/S will or will not be used is key. These policies need to be readily available to and understood by the individuals within the organization.

A second implication is also related to EM/S policies. Individuals who receive formal training on their organization's EM/S policy perceive higher levels of organizational fairness. Here, management can soften the impact of the use of EM/S by not only having an EM/S policy, but by making sure that all individuals are properly and adequately trained on this policy, thus generating a sense of fairness among the employees as to the use of EM/S. From the employee's perspective, having a working knowledge of the policy increases their awareness of surveillance and creates a more open communication environment in which to work. Again, this points to the overall importance of having an EM/S policy in place.

Finally, with surveillance concern shown to be a modest moderator between panoptic effects and the outcomes variables tested in this research, organizations that can lower the surveillance concerns can help negate any perceived lack of privacy felt by employees. To that end, organizations could accomplish this by: (a) having an established EM/S policy, (b) providing formal training on this policy, (c) employing a more democratic management style, and (d) providing a more open communication climate within the organization.

In addition to the potential implications for policies, there are also potential implications for managers. As noted earlier, if management can find justifications / reasons for surveillance that are both understood and accepted by employees, then the

negative effects of surveillance may be alleviated. Managers need to understand the concerns employees have about surveillance and directly address those issues by providing sound rationale for surveillance use. Additionally, managers need to keep employees informed about the presence of surveillance, either through signs, memos, announcements, or other methods.

Finally, there are additional implications for the designers and users of communication technology. The use and acceptance of surveillance through communication technology seems to have little impact on the design or use of the technology. As such, designers need to stay on top of a number of areas including: (a) organizational communication needs, (b) legal requirements (such as the ECPA), and (c) the transparent nature of the surveillance capabilities so as to not interfere with the communication process. From the users perspective, they must become more educated in the surveillance potential of and purpose for surveillance from the communication technologies. Knowledge and understanding of the existing conditions may assist in reducing the impact and concern for EM/S in the workplace.

KEY STRENGTHS AND LIMITATIONS OF THE CURRENT RESEARCH

Key Strengths

First, this study assessed behavior through the use of self-report data from individuals in actual organizations of interest rather than collecting experimental data. Thus, the results can be more broadly generalized to the overall population. Related to

this method, and another strength of the research, was the use of multiple geographically dispersed research locations within the United States. This was done primarily to obtain a more diverse sample devoid of any regional peculiarities, such as a focus on a particular industry common to one region. As a result of the multiple locations, there was a demographically diverse sample representing a variety of occupations, organizations and work experience. Third, in addition to being a diverse population, this research sample was fairly large, which provided additional support and power to the relationships discovered in this project. Next, the measures used in the survey questionnaire were consistently reliable and those based on previous measures had similar reliability scores as the original scales, thus adding to the overall reliability and strength of this research.

Beyond the strengths of the methods used, another strength of this research is its focus on information other than just perceptions of privacy and surveillance in the organization in general. This research looked at several possible sources of panoptic effects, including communication technology, organizational factors, and EM/S policies. This allows for a broader understanding of the issues involved in communication privacy and surveillance in the organization. Finally, an additional strength lies in the media chosen to be studied as part of this research. The four communication technologies (telephone, voicemail, e-mail and instant messaging) accounted for over 70% of the channels used in typical weekly communication in the organization. Face-to-face conversations represented another 27%, leaving just over 2% unaccounted for in this research. While not nearly as common in the organization as some research has shown,

instant messaging represented over 4% of the typical weekly use, indicating it is a viable channel for organization communication.

Key Limitations

Some of the same items that could be considered strengths in this study can also be considered limitations to a certain extent. First, the strong correlations present in some of the relationships among the various elements and model components made for difficulty in testing the structural equation model as intended. Though this is more of a limitation of the software, it did impact how the model was tested. Second, the use of self-report data throughout the research was somewhat problematic in that it prevented comparing observable actions from a third party perspective with the perspectives individuals reported. The data collected for this project cannot be used to make any direct claims as to the actual impact of EM/S in the workplace, but rather, it can only speak to the perceived impacts. In addition, because no actual behaviors were observed in this project, no direct behavioral links can be established. Although this type of research is very common in organizational research, it has been criticized for a number of reasons including the bias behind socially desirable responses (Donaldson & Grant-Vallone, 2002). This was most notable with the outcome variable of job performance. Although the questions attempted to gauge a general idea of job performance, the fact that it was self-report data may have made it less reliable. Along this line, this variable was subject to socially desirable responses (and in fact the two variables were highly correlated as

noted earlier). This indicates that participants may have rated their job performance much higher than if it had been evaluated by a neutral observer or via supervisor evaluations.

One of the key limitations of this project was that there were far fewer EM/S policies to evaluate than was anticipated. This in part was due to the reduced number of respondents who reported their organizations had EM/S policies in place. Additionally, of those organizations that did report an EM/S policy many reported that they were not publicly available. Finally of those who agreed to submit a copy of their EM/S policy and actually did so, not enough met the criteria of being an organizational EM/S policy as defined by the researcher to permit additional analysis. In addition to the low numbers of policies, there was also a low response to the requests for interviews. While 55 participants indicated they would be willing to be interviewed, less than 15% of those actually did. Although the post-survey interviews were included only as a potential aid in interpreting the results in the survey, both the small number of interviews and the lack of variation, particularly with level of surveillance concern, did little to provide any broad interpretations. These policies were to have provided additional breadth and depth (e.g., specific details regarding rules, consequences, etc.) on the impact of EM/S policies that was not possible through the survey instrument. Future research should focus on gaining access to sufficient examples of these policies for a thorough analysis.

Next, another potential limitation was the presence of some ordering effects present in the data. Of the two versions of the survey questionnaire deployed, respondents who utilized the original survey (see Appendix A) reported higher mean scores for the

communication technology element variables, such as experience, comfort and surveillance beliefs. The second version of the survey was reordered so that all non-surveillance related and non-demographic related items were placed at the beginning of the survey. Beyond these variables mentioned here, no other ordering effects were present. Another potential limitation from the questionnaire may lie in how respondents reported their use of the selected communication technologies. While the questions ask about their typical weekly usage, it may have been possible that respondents reported their usage based on the previous week since that may have been easier to recall. Additionally, the data on communication technology usage, experience and comfort may indicate that the sample population was relatively technologically savvy. This may not represent the overall workforce and may be a limitation of the sampling procedure. Finally, one last potential limitation of the research again lies with one of its strengths – a large sample. The large sample gathered for this research made it difficult to test the structural equation models as the chi-square statistic is extremely sensitive to this factor. While other indicators of model fit were also used, this was still considered to be a limitation.

FUTURE DIRECTIONS

The following section will present future directions of the current research in order to improve and refine the process. They will focus on addressing the limitations noted above and the problems associated with the model presented in this research. Finally, additional directions of where this research might proceed will be offered.

As noted earlier, EM/S policies constituted the strongest of the panoptic effects tested in the model. Unfortunately, with the failure to gain access to sufficient public examples of EM/S policies, no in depth analysis was possible of these policies. Future research will be conducted that will focus specific attention to EM/S policies. One possible research project would consist of a quasi-experimental design where respondents would be asked to evaluate randomly assigned sample EM/S policies. These policies would vary in length, complexity, clarity, and most importantly type (i.e. right-to-monitor v. hands-off). This would allow insight into the impact of an EM/S policy without having to gain access to a large number of organizations and their policies.

A similar study to what was conducted for this research project could be conducted at the organizational level, rather than at the individual level, within numerous organizations. This study would allow for a better look at the impact of surveillance at multiple levels within the same organization, providing unique perspectives on surveillance from executives, management and other employees. It would also allow for the possible access to organizational data such as job performance and actual statistics on surveillance use within the organization. Additionally, it may be beneficial to study two organizations simultaneously – one where members would be likely to be technologically savvy and one where they may not be or need to be.

One of the limitations of the model was the lack of significant outcome variables to test. To that end, a new set of outcome variables should be identified for use in future research in this area. These variables should be selected based on their importance to

organizational communication issues rather than those that are typically organizationally or business focused. These additional variables should also be as varied as possible covering many aspects of organizational communication. By casting a wider net, future research may be able to identify previous unknown impacts of the EM/S in the workplace. With privacy perceptions and organizational fairness identified as significant outcome variables in this research, and with the poor fit of the overall model, it is likely there are other variables of importance in developing a more complete model of surveillance. Some potential variables could include: (a) trust – specifically individual trust in the organization as impacted by the use of EM/S, (b) loyalty – how will the use of EM/S impact an individual's connection to the organization, and (c) identification – does the use of EM/S impact how an individual perceives themselves, both as an individual and an organizational member. These suggested variables could provide more insight into the issues of organizational fairness and the importance of surveillance concern.

Along that line, additional research should also be focused on understanding the variable of surveillance concern or from a different perspective, comfort with surveillance, which appears to play a somewhat problematic role in organizational EM/S use. We need to understand what impacts surveillance concern and acceptance. First, surveillance concern needs to be more clearly measured. The scale used in this research may only be capturing some essence of surveillance concern. Second, determining where this variable fits into the overall picture of EM/S and panoptic effects in particular could be a crucial factor in developing a more accurate EM/S model. Third, we need to more

clearly understand the overall role that surveillance concern plays in an individual's thought process concerning privacy in the workplace. Overall, learning more about this key variable will lead to a better understanding of the overall panoptic effect concept in the workplace.

From a critical perspective, looking in particular at the surveillance concern / comfort with surveillance concept, a more thorough examination is warranted looking into the possibility that this acceptance of surveillance is hegemonic. Do employees accept the information and policies of the organizations blindly? One concern is that employees may not fully appreciate the importance or seriousness of the workplace surveillance issue. While they might believe that, from an organizational perspective, surveillance can be good or is needed, this does nothing to prevent the possibility that surveillance may be used against them. Looking back at Foucault's (1977) work with the use of the panopticon in an attempt to subdue employees to the authority of management, the potential consequences to the individual may not be fully understood by the employee.

In the legal environment, the current research seems to support the idea that workplace surveillance is a poorly understood phenomenon. Future research could look into relationships between legal protections that employees perceive versus those that actually exist. Furthermore, this research could also look at the impact of laws and regulations that require certain industries and organization to surveil communication.

Determining what, if any effect this may have could shed additional light on the importance of up-to-date laws and regulations concerning surveillance in the workplace.

Next, this study focused specifically on social communication within the organization. A study looking specifically at task-based communication or one that looked at both would provide a useful contrast to the research presented here. This would be valuable in determining how social and task-based communication are linked to surveillance practices. It could also provide additional understanding of the panoptic effects on communication in general inside the organization.

Last, with the focus on communication technology, and the apparent weak impact of perceived surveillance potential from this model component, future research needs to be conducted to more accurately assess the impacts of surveillance on technology use and how individual use factors (beyond frequency, comfort, and experience). Potential studies could focus on media selection as an overarching theme with surveillance playing an important variable. Here, it may be possible to determine the importance of surveillance on the selection and use of technologies as compared to other traditional variables found in the many theories on media selection.

SUMMARY AND CLOSE

This chapter presented interpretations of the key results reported in Chapter 4. In addition specific conclusions from each of these results were presented. These interpretations and conclusions covered both the hypotheses/research questions presented and the three-component model of panoptic effect potential. Next, the key contributions

of this research were presented, including the modest impact that the moderating variable of surveillance concern demonstrated. Following key contributions, practical implications of this research were presented, demonstrating the importance to individuals, management and the overall organization. This was followed by a presentation of the key strengths and limitations of the present research project. Finally, future directions were offered that provided potential solutions to some of the study limitations and potential changes to future panoptic effect model design and testing.

Overall, this dissertation project sought to bring additional knowledge concerning EM/S use and its impact on communication in the organization. In that effort, a number of key outcomes were discovered, most notably, the importance of examining multiple perspectives of perceived panoptic effect potential. Of these, the importance of studying the impact of EM/S policies was made clear. These and other findings of the research clearly indicate, along with previous findings in the literature, that much more research needs to be conducted in this area of organizational communication. In today's society, where privacy issues come in direct competition with safety issues, the study of EM/S surveillance in the organization represents a vital area of research with plenty of work yet to be done.

Endnote

[1]These results, similar to those found for job satisfaction, may be the result of using near similar measures to investigate both variables. This may have had the unintended affect of linking social communication satisfaction and job satisfaction in the respondents mind. There is some support for this idea as the two variables were highly and significantly correlated ($r = .59$, $p \leq .01$) in the current research. Respondents may not have been able to easily differentiate between the two constructs, or genuinely saw them as related.

Appendix A

Web-Survey Questionnaire

Online Organizational Electronic Surveillance/Monitoring Survey

Communication, Surveillance and Monitoring in the Workplace

The following survey is designed to help increase our understanding of the importance and impact of monitoring and surveillance in the workplace on social (non-task) communication. Social (non-task) communication is defined as communication at work among employees or others (family, friends, etc.) that has no direct work-related purpose and is typically informal or personal in nature. Here, monitoring and surveillance is defined as the observation of, or recording and storage of electronic communication technologies, whereby the organization can review the communication of its employees regardless of the rationale. Additionally, some items are concerned with communication privacy. This concept is defined as the freedom from observation or intrusion into the communication practices of an individual.

Each section will have a short set of instructions on how you should respond. Most items allow you to simply click on the pull down menu, located on the right half of the screen, and then select the option that best fits your reaction to the question or survey item. Some questions require you to select all those responses that apply to you. Others require a short answer or numerical value. For these items simply enter the information in the space provided.

Please be sure to include your name, e-mail address, organization, and name of the student who recruited you for this research project so that they may receive the appropriate course credit.

Thank you for your time. Your responses on this survey will be used in our teaching about new communication technologies and organizations, as well as for a student dissertation project.

Craig R. Scott, Ph.D., Instructor for New Communication Technologies - The University of Texas at Austin

Scott C. D'Urso, Doctoral Candidate - The University of Texas at Austin

If you have any problems loading this survey, please e-mail me at dursos@mail.utexas.edu

Section 1 - Technology Perceptions

Instructions: Please read the following items regarding your views of four contemporary communication technologies and then enter, to the right of the statement, the most appropriate response from among the following options: *1=Strongly Disagree, 2=Disagree, 3=Somewhat Disagree, 4=No Opinion, 5=Somewhat Agree, 6=Agree, 7=Strongly Agree*

I am very experienced using the telephone. ___

I am very experienced using voicemail. ___

I am very experienced using e-mail. ___

I am very experienced using instant messaging. ___

I feel comfortable using the telephone. ___

I feel comfortable using voicemail. ___

I feel comfortable using e-mail. ___

I feel comfortable using instant messaging. ___

I believe that the telephone is capable of being monitored. ___

I believe that voicemail is capable of being monitored. ___

I believe that e-mail is capable of being monitored. ___

I believe that instant messaging is capable of being monitored. ___

Section 2 - Surveillance Potential of Technology

Instructions: Please read the following items regarding the monitoring/surveillance potential of four contemporary communication technologies and then enter, to the right of each statement, the most appropriate response from among the following options: *1=Strongly Disagree, 2=Disagree, 3=Somewhat Disagree, 4=No Opinion, 5=Somewhat Agree, 6=Agree, 7=Strongly Agree*

I personally believe that my communication using the telephone is monitored/surveilled at least part of the time. ___

I personally believe that my communication using voicemail is monitored/surveilled at least part of the time. ___

I personally believe that my communication using e-mail is monitored/surveilled at least part of the time. ___

I personally believe that my communication using instant messaging is monitored/surveilled at least part of the time. ___

I personally believe that communication at work using the telephone is not private. ___

I personally believe that communication at work using voicemail is not private. ___

I personally believe that communication at work using e-mail is not private. ___

I personally believe that communication at work using instant messaging is not private. ___

I personally believe that monitoring/surveillance of the telephone occurs frequently. ___

I personally believe that monitoring/surveillance of voicemail occurs frequently. ___

I personally believe that monitoring/surveillance of e-mail occurs frequently. ___

I personally believe that monitoring/surveillance of instant messaging occurs frequently. ___

Most of my fellow employees believe that communication over the telephone is monitored/surveilled at least part of the time. ___

Most of my fellow employees believe that communication over voicemail is monitored/surveilled at least part of the time. ___

Most of my fellow employees believe that communication over e-mail is monitored/surveilled at least part of the time. ___

Most of my fellow employees believe that communication over instant messaging is monitored/surveilled at least part of the time. ___

Most of my fellow employees believe that communication at work using the telephone is not private. ___

Most of my fellow employees believe that communication at work using voicemail is not private. ___

Most of my fellow employees believe that communication at work using e-mail is not private. ___

Most of my fellow employees believe that communication at work using instant messaging is not private. ___

My company acknowledges that they monitor/surveil communication over the telephone. ___

My company acknowledges that they monitor/surveil communication over voicemail. ___

My company acknowledges that they monitor/surveil communication over e-mail. ___

My company acknowledges that they monitor/surveil communication over instant messaging. ___

Section 3 – Typical Weekly Usage

Instructions: Please estimate your *typical weekly use* by entering the percentage you use each, in relation to the other communication technologies and face-to-face communication. The total for all six items should equal 100%. *(Example: 35% Telephone, 15% Voicemail, 20% E-mail, 10% Instant Messaging, 15% Face-to-Face, 5% Other)*

___ *Telephone,* ___ *Voicemail,* ___ *E-mail,* ___ *Instant Messaging,* ___ *Face-to-face,* ___ *Other*

Section 4 - Organizational Management

Instructions: Please read the following items regarding the organizational management style at work and then enter the most appropriate response from among options provided. (Note: a democratic style encourages participation and involvement from everyone in the management process, while an autocratic style implies that there is a single individual in control of the management process) *1=Very Democratic, 2=Democratic, 3=Somewhat Democratic, 4=Neither, 5=Somewhat Autocratic, 6=Autocratic, 7=Very Autocratic*

The organizational management style of my company could best be described as: ___

My coworkers would best describe the organizational management of this company as: ___

I would describe the way that management treats others in this organization as: ___

The type of organizational management style evident through communication with management could best be described as: ___

Section 5 - Organizational Communication

Instructions: Please read the following items regarding the openness of communication within your organization and then select the most appropriate response from among the following options: *1=Very Closed/Restricted, 2=Closed/Restricted, 3=Somewhat Closed/Restricted, 4=No Opinion, 5=Somewhat Open, 6=Open, 7=Very Open*

I would describe the level of openness in my communication with coworkers as: ___

I would describe the level of openness in superior-subordinate communication as: ___

I would describe the level of openness in my communication with other organizational members as: ___

I would describe the level of openness in my communication with upper management as: ___

Section 6 - Organizational Perceptions

Instructions: Please read the following items regarding your perceptions of your working environment (defined as the overall surroundings (physical, social, environmental, etc.) where you mainly spend your time during the typical workday) and their impact on the potential for monitoring/surveillance in the workplace. Then select the most appropriate response from among the following options: *1=Strongly Disagree, 2=Disagree, 3=Somewhat Disagree, 4=No Opinion, 5=Somewhat Agree, 6=Agree, 7=Strongly Agree*

My *working environment* leads me to believe that my communication is monitored/surveilled at least part of the time. ___

My *working environment* leads me to believe that communication at work is not private. ___

My *working environment* leads me to believe that monitoring/surveillance occurs frequently. ___

The *working environment* leads my fellow employees to believe that their communication is monitored/surveilled at least part of the time. ___

The *working environment* leads my fellow employees to believe that communication at work is not private. ___

Management's view of communication among employee's leads me to believe that communication is monitored/surveilled at least part of the time. ___

Section 7 - Organizational Policies on Electronic Monitoring/Surveillance

Instructions: Please read the following items regarding organizational policies concerning monitoring and surveillance in the workplace. *Please Note: If your answer to the first question is no, you may immediately skip the remaining 4 items as well as Sections 8 through 10 as they do not apply to you. Please continue with the questionnaire at Section 11.*

Does your company have a privacy policy regarding monitoring/surveillance of its members? __ Y __ N __ Don't Know

Is this policy publicly available? __ Y __ N __ Don't Know

If yes and it is posted on the Internet, please enter the URL here:

_____

If yes, but it is only available in an electronic format (i.e., MS Word, PDF), would you be willing to e-mail a copy? __ Y __ N

If yes, but only in hard copy, would you be willing to submit a copy via a pre-paid envelope? __ Y __ N

Section 8 - Clarity of Organizational Policies

Instructions: Please read the following items regarding the clarity of your organizations electronic monitoring/surveillance (EM/S) policy, which range from *Hands-off (HO)*, where management chooses not to monitor or surveil its employees, to *Right-to-Monitor (RTM)* where management makes it clear that they can and will monitor or surveil employees. Then select the most appropriate response from among the following options: *1=Very Clear Hands-off Policy, 2=Clear Hands-off Policy, 3=Somewhat Clear Hands-off Policy, 4=Unclear, 5=Somewhat Clear Right to Monitor Policy, 6=Clear Right to Monitor Policy, 7=Very Clear Right to Monitor Policy*

Which of the following best describes your belief about the type of the EM/S policy at your organization? ___

Which of the following best describes your coworkers belief about the type of EM/S policy used at work? ___

Which of the following best describes your EM/S policy based on communication with management? ___

Which of the following best describes your EM/S policy based on the communication of the policy to employees? ___

Section 9 - Enforcement of Organizational Policies

Instructions: Please read the following items regarding the enforcement of your organization's electronic monitoring/surveillance (EM/S) policy ranging from *Hands-off (HO)* to *Right to Monitor (RTM)*. Then select the most appropriate response from among the following options: *1=Very Clear Enforcement of the Hands-Off Policy, 2=Clear Enforcement of the Hands-off Policy, 3=Somewhat Clear Enforcement of the Hands-off Policy, 4=Unclear, 5=Somewhat Clear Enforcement of the Right to Monitor Policy, 6=Clear Enforcement of the Right to Monitor Policy, 7=Very Clear Enforcement of the Right to Monitor Policy*

Which of the following best describes your belief about the enforcement of the EM/S policy at your organization? ___

Which of the following best describes your coworkers' belief about the enforcement of EM/S policy used at work? ___

Which of the following best describes your belief about the enforcement of the EM/S policy based on communication with management? ___

Which of the following best describes the enforcement of the EM/S policy based on the communication of the policy to employees? ___

Section 10 - Surveillance Potential from Policies

Instructions: Please read the following items regarding your understanding of your organization's electronic monitoring/surveillance (EM/S) policy and its potential impact on surveillance in the workplace. Then select the most appropriate response from among the following options: *1=Strongly Disagree, 2=Disagree, 3=Somewhat Disagree, 4=No Opinion, 5=Somewhat Agree, 6=Agree, 7=Strongly Agree*

My *understanding of the company's policy* on EM/S leads me to believe that my communication is monitored/surveilled at least part of the time. ___

My *understanding of the company's policy* on EM/S leads me to believe that communication at work is not private. ___

My *understanding of the company's policy* on EM/S leads me to believe that monitoring/surveillance occurs frequently. ___

My colleagues *understanding of the company's* policy on EM/S leads them to believe that their communication is monitored/surveilled at least part of the time. ___

My colleagues *understanding of the company's policy* on EM/S leads them to believe that communication at work is not private. ___

Management's use of the *company's EM/S policy* leads me to believe that communication is monitored/surveilled at least part of the time. ___

Section 11 - Workplace Communication

Instructions: Please read the following items regarding your perceptions of the communication that occurs in your workplace. Then select the most appropriate response from among the following options: *1=Strongly Disagree, 2=Disagree, 3=Somewhat Disagree, 4=No Opinion, 5=Somewhat Agree, 6=Agree, 7=Strongly Agree*

I have enough opportunity to communicate socially (non-task) at work. ___

My coworkers feel they have enough opportunity to communicate socially (non-task) at work. ___

Social (non-task) communication at work is permitted by management. ___

I receive enough social (non-task) communication at work. ___

I receive enough information about how well I am doing my job. ___

I receive enough information about what organizational decisions mean to my job. ___

I have enough opportunity to report to my supervisors about what I am doing in my job. ___

I have enough opportunity to discuss my problems with supervisors. ___

I have enough opportunity to talk with other employees if I need information in order to do my job. ___

I have enough opportunity to talk face to face with more than two people at work. ___

Section 12 - Communication Privacy at Work

Instructions: Please read the following items regarding the privacy of communication at your organization and then select the most appropriate response from among the following options: *1=Strongly Disagree, 2=Disagree, 3=Somewhat Disagree, 4=No Opinion, 5=Somewhat Agree, 6=Agree, 7=Strongly Agree*

I believe that my communication at work is private. ___

My coworkers believe that their communication at work is private. ___

No one is reading my messages or listening to my conversations at work that shouldn't be. ___

I believe I have very little privacy in my communication at work. ___

Section 13 - Workplace Fairness

Instructions: Please read the following items regarding your perceptions of fairness within your organization and then select the most appropriate response from those offered for each item.

How often do you feel that decisions are made in fair ways at you job? ___ Very Infrequently, ___ Infrequently, ___ Somewhat Infrequently, ___ Neither, ___ Somewhat Frequently, ___ Frequently, ___ Very Frequently

Overall, how fair would you say decisions and processes are where you work? ___ Very Unfair, ___ Unfair, ___ Somewhat Unfair, ___ Neither, ___ Somewhat Fair, ___ Fair, ___ Very Fair

How would you rate the overall fairness with which issues and decisions that come up at work are handled? [b]

There is a general sense among employees that things are handled in fair ways at work. ___ Strongly Disagree, ___ Disagree, ___ Somewhat Disagree, ___ Neither,

___ Somewhat Agree, ___ Agree, ___ Strongly Agree

There is an effort being made to be fair to employees when decisions are being made. ___ Strongly Disagree, ___ Disagree, ___ Somewhat Disagree, ___ Neither,

___ Somewhat Agree, ___ Agree, ___ Strongly Agree

Section 14 - Job Satisfaction

Instructions: Please read the following items regarding your perceptions of job satisfaction at work and then select the most appropriate response from the options provided for each item.

Which one of the following shows how much of the time you feel satisfied with your job? ___ Never, ___ Seldom, ___ Occasionally, ___ About half of the time, ___ A good deal of the time, ___ Most of the time, ___ All the time

How much of the time you feel satisfied with your social (non-task) communication at work? ___ Never, ___ Seldom, ___ Occasionally, ___ About half of the time, ___ A good deal of the time, ___ Most of the time, ___ All the time

Choose one of the following statements which best tells how well you like your job. Which statement best describes how well you like the social interaction that is part of your job? ___ I hate it, ___ I dislike it, ___ I don't like it, ___ I am indifferent to it, ___ I like it, ___ I am enthusiastic about it, ___ I love it.

Which statement best describes how well you like the social interaction that is part of your job? ___ I hate it, ___ I dislike it, ___ I don't like it, ___ I am indifferent to it, ___ I like it, ___ I am enthusiastic about it, ___ I love it.

Which one of the following shows how you think about your job compared with other people? ___ No one dislikes their job more than I dislike mine; ___ I dislike my job much more than most people dislike theirs; ___ I dislike my job more than most people dislike theirs; ___ I like my job about as well as most people like theirs; ___ I like my job better than most people like theirs; ___ I like my job much better than most people like theirs; ___ No one likes their job better than I like mine.

Which one of the following shows how you think about your social interactions at work compared with other people? ___ No one dislikes their social interactions more than I dislike mine; ___ I dislike my social interactions much more than most people dislike theirs; ___ I dislike my social interactions more than most

people dislike theirs; ___ I like my social interactions about as well as most people like theirs; ___ I like my social interactions better than most people like theirs; ___ I like my social interactions much better than most people like theirs; ___ No one likes their social interactions better than I like mine.

I would rate my overall satisfaction with my current job as: ___ Very Dissatisfied, ___ Dissatisfied, ___ Somewhat Dissatisfied, ___ Neither, ___ Somewhat Satisfied, ___ Satisfied, ___ Very Satisfied

I would rate my overall satisfaction with my social (non-task) communication at work as: : ___ Very Dissatisfied, ___ Dissatisfied, ___ Somewhat Dissatisfied, ___ Neither, ___ Somewhat Satisfied, ___ Satisfied, ___ Very Satisfied

Section 15 - Job Performance

Instructions: Please read the following items regarding your perceptions of your job performance at work and then select the most appropriate response from among the following options: *1=Very Unproductive, 2=Unproductive, 3=Somewhat Unproductive, 4=No Opinion, 5=Somewhat Productive, 6=Productive, 7=Very Productive*

I would best describe my productivity at my current job as: ___

My subordinates would rate my productivity in my current job as: ___

My supervisor would rate my productivity in my current job as: ___

My coworkers would rate my productivity in my current job as: ___

Section 16 - Workplace Privacy

Instructions: Please read the following items regarding your perceptions of general workplace privacy and then select the most appropriate response from among the following options: *1=Strongly Disagree, 2=Disagree, 3=Somewhat Disagree, 4=No Opinion, 5=Somewhat Agree, 6=Agree, 7=Strongly Agree*

It is acceptable for the company to collect the general information that is does through monitoring. ___

It is acceptable to monitor social (non-task) communication at work. ___

It is necessary for the company to collect the general information that it does through monitoring. ___

It is necessary for the company to monitor social (non-task) communication at work. ___

I feel comfortable, with the information about me, which the company collects through monitoring. ___

I feel comfortable about the company monitoring social (non-task) communication at work. ___

Greater controls are needed to limit how the company uses information it collects by monitoring. ___

Greater controls are needed to limit the ability of the company to monitor social (non-task) communication at work. ___

Surveillance at work is an invasion of my privacy. ___

Surveillance of social (non-task) communication at work is an invasion of my privacy. ___

Section 17 – Overall Communication Style

Instructions: Please read the following items regarding the privacy of communication at your organization and then select the most appropriate response from among the following options: *1=Strongly Disagree, 2=Disagree, 3=Somewhat Disagree, 4=No Opinion, 5=Somewhat Agree, 6=Agree, 7=Strongly Agree*

It is sometimes hard for me to go to work if I am not encouraged. ___

I sometimes feel resentful when I don't get my way. ___

On a few occasions, I have given up doing something because I thought too little of my ability. ___

There have been times when I felt like rebelling against people in authority even though I knew they were right. ___

No matter who I'm talking to, I'm always a good listener. ___

There have been occasions when I took advantage of someone. ___

I'm always willing to admit it when I make a mistake. ___

I sometimes try to get even rather than forgive and forget. ___

I am always courteous, even to people who are disagreeable. ___

I have never been irked when people express ideas different from my own. ___

There have been times when I was quite jealous of the good fortune of others. ___

I am sometimes irritated by people who ask favors of me. ___

I have never deliberately said something that hurt someone's feelings. ___

Section 18 – Potential Reactions to Monitoring

Instructions: Please read the list of following behaviors and check all those that apply to you:

___ Password-protected your computer to prevent others from using it.

___ Changed your e-mail, IM, or voicemail password on a regular basis.

___ Used encryption software for e-mail or IM use.

___ Registered for a private e-mail or IM account.

___ Used a public computer (non-company owned) during the workday to check personal e-mail or to IM.

___ Purchased a handheld computer for personal e-mail or IM use while at work.

___ Purchased a cell phone for personal calls or for voicemail for use at work.

___ Use a public phone for personal calls or for voicemail during the workday.

___ Used a coworker's or someone else's computer for personal e-mail or IM while at work.

___ Used a coworker's else's phone for personal calls or for voicemail while at work.

___ Deleted files on your work computer to hide signs of personal use.

___ Deleted/disabled cookies that may monitor your use of your work computer.

___ Deleted/emptied browser cache to remove records of your activities.

___ Limited your non-task/social communication to certain times during the workday.

___ Purposely avoided any non-task/social communication during the workday.

___ Other: _____

Additional Items (Non-Dissertation Related)

Section 19 - Instant Messaging

Instructions: Please read the following items regarding the use of instant messaging in the workplace (if you do not use instant messaging in the workplace, you may skip this section and continue with Section 20). Then, select the most appropriate response from among the following options: *1=Strongly Disagree, 2=Disagree, 3=Somewhat Disagree, 4=No Opinion, 5=Somewhat Agree, 6=Agree, 7=Strongly Agree*

I am very experienced using instant messaging. ___

I feel that instant messaging is easy to use. ___

I feel confident using instant messaging. ___

I understand how to use all of the features of instant messaging. ___

I feel comfortable using instant messaging. ___

I feel that I am a novice using instant messaging. ___

I frequently use instant messaging to communicate with coworkers. ___

I frequently use instant messaging to communicate with superiors. ___

I frequently use instant messaging to communicate to subordinates. ___

I believe that instant messaging is essential to my job. ___

Using instant messaging has improved my overall communication ability at work. ___

Instant messaging is an effective way for me to communicate at work. ___

Section 20 - Communication via Technology

Instructions: Please read the following items regarding your perceptions of use of four contemporary communication technologies. Then select the most appropriate response from among the following options: *1=Strongly Disagree, 2=Disagree, 3=Somewhat Disagree, 4=No Opinion, 5=Somewhat Agree, 6=Agree, 7=Strongly Agree*

[*Technology*] allows my communication partners and I to give and receive timely feedback. ___

[*Technology*] allows my communication partners and I to tailor our messages for our own personal requirements. ___

[*Technology*] allows my communication partners and I to communicate a variety of different cues (such as emotional tone, attitude, or formality) to our messages. ___

[*Technology*] allows my communication partners and I to use rich and varied language in our messages. ___

Section 21 - Communication Technology Use and Privacy

Instructions: Please read the following items regarding the amount of privacy you have now and the amount of privacy you desire when using each of the communication technologies presented below. Then select the most appropriate response from among the following options: *1=Very Little, 2=Little, 3=Some, 4=Great, 5=Very Great*

The amount of privacy you have now with face-to-face conversations/meetings with others. ___

The amount of privacy you desire with face-to-face conversations/meetings with others. ___

The amount of privacy you have now with landline telephone calls to/from others. ___

The amount of privacy you desire with landline telephone calls to/from others. ___

The amount of privacy you have now with voicemail messages left/received. ___
The amount of privacy you desire with voicemail messages left/received. ___
The amount of privacy you have now with faxes sent/received. ___
The amount of privacy you desire with faxes sent/received. ___
The amount of privacy you have now with intra-organizational printed mail sent/received. ___
The amount of privacy you desire with intra-organizational printed mail sent/received. ___
The amount of privacy you have now with e-mail messages sent/received. ___
The amount of privacy you desire with e-mail messages sent/received. ___
The amount of privacy you have now with videoconferencing meetings. ___
The amount of privacy you desire with videoconferencing meetings. ___
The amount of privacy you have now with audio-conferencing meetings. ___
The amount of privacy you desire with audio-conferencing meetings. ___
The amount of privacy you have now with wireless phone conversations. ___
The amount of privacy you desire with wireless phone conversations. ___
The amount of privacy you have now with other forms of communication. ___
The amount of privacy you desire with other forms of communication. ___

Section 22 - Demographics & Contact Information

Instructions: Please answer the following general questions about yourself and the organization you work for currently.

Age: __ __

Sex: __ M __ F

Highest level of education completed: __ High School Graduate; __ Associates Degree; Bachelors Degree; __ Masters Degree; __ Ph.D.

Job Type: __ Administrative; __ Technical Support; __ Engineer; Medical Professional; __ Business Professional; __ Other

Organizational Type: __ Technology; __ Manufacturing; __ Medical; __ Non-Profit; __ Education; __ Government; __ Military; __ Other

Approximate length of time at current organization: ___ years.

Approximately how many management layers lie between the lowest level employee and the most senior employee of the company: _____

Organizational Size: please enter the approximate number of employees working for your organization _____

My company could best be described as (1=Very Decentralized, 2=Decentralized, 3=Somewhat Decentralized, 4=Neither, 5=Somewhat Centralized, 6=Centralized, 7=Very Centralized) in their control of its employees. ___

Have you received formal training on your organization's EM/S policy?

__ Y, __ N

Which of the following would best describe your workspace?

___ Office with a door, ___ Office without a door, ___ Cubicle with door, ___ Cubicle with out door, ___ Open work area, ___ Other: _____

Would filling out a survey at work, such as this one, be considered inappropriate if someone noticed you doing so? __ Y, __ N, __ Don't know

Please describe, if applicable, an instance in your organization where you were aware that the EM/S policy had been violated, and the consequences of this violation. - _____

Section 23 - Contact Information

Instructions: Please fill in the following contact information items. Make sure to type in the name of the student who recruited you for this survey, so that they may receive the proper course credit. This material will only be used to verify participation in this research and/or to acquire a copy of your organization's electronic monitoring/surveillance (EM/S) policy.

Name: _____

Please enter your e-mail address: _____

Name of your organization: _____

If you are willing to submit a hard copy of your organization's privacy policy via pre-paid envelope, please enter mailing address: _____

Would you be willing to be interviewed at a later date concerning the issues of EM/S in the workplace? __ Y, __ N

If yes, please provide a phone number where you may be contacted: ( ) -

Name of the student who recruited you for this survey:

_____

Appendix B

Post-Survey Interview Protocol

Name: _____ Phone Number:_____ Policy – N Y DK

[INTERVIEWER] Hello, my name is Scott D'Urso. I am a doctoral student at the University of Texas at Austin. I wanted to first thank you for volunteering to participate in this short interview. This interview will consist of six questions. It should take approximately 15 minutes to complete. I wanted to let you know that this conversation is not being recorded and only notes will be taken during the interview. Your name will not appear in relation to any information you offer today. Any information you offer will be kept confidential. Do you have any questions before we start the interview?

[RESPONDENT] –

[INTERVIEWER] - How would you characterize your level of concern about the monitoring/surveillance of social (non-task) communication in the workplace?

[RESPONDENT] –

[INTERVIEWER] - To what extent do you have concerns about using various communication technologies that may or may not be surveilled at work?

[RESPONDENT] –

[INTERVIEWER] - Follow-up – Does this vary by channel (Telephone, Voicemail, E-mail, IM)?

[RESPONDENT] –

[INTERVIEWER] - Is there anything about your working environment that influences the amount of surveillance your perceive in the workplace

[RESPONDENT] –

[INTERVIEWER] - How would you describe your organization's efforts to inform its members about the use, or potential use of electronic monitoring/surveillance of social (non-task) communication in the workplace?

[RESPONDENT] –

[INTERVIEWER] - Is there anything else (examples, stories, etc.) related to the monitoring/surveillance of social (non-task) communication that you would like to discuss?

[RESPONDENT] –

[INTERVIEWER] – That completes the interview. I want to thank you once again for participating in this interview. If you should have questions later on, you can either call me at 414-288-5477 or e-mail me at dursos@mail.utexas.edu.

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Vita

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