

## **NEW MACHINES IN SMALL OFFICES: GENDER, TECHNOLOGY AND COMMUNICATION**

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The inefficient introduction of new office equipment into organizations raises questions about the communication barriers between levels of hierarchy, forms of control and authority and the gender division of labour. Recent sociological work on workplace sexuality is introduced to explain these findings.

La mise en place inefficace de nouvel équipement de bureau dans des organismes soulève des questions en ce qui concerne les obstacles à la communication entre les niveaux hiérarchiques, les formes de contrôle et d'autorité et la répartition des tâches entre hommes et femmes. Afin d'expliquer ces données, une recherche sociologique sur la sexualité en milieu de travail a récemment été présentée.

### **Introduction**

In the early 1980s, small computers, word processors, and other forms of electronic office equipment became readily available on the Canadian market and highly fashionable. In large organizations, central planners worked out systems for word processing pools, executive personal computing systems, and a wide variety of other office systems. But in small firms, the process was very different. These differences are worth considering both because of the large number of small work organizations in our society and for what they tell us about the nature and problems of communication in the workplace.

In the Canadian economy, small firms compose a large number of employers in nearly all sectors. Among professionals are found small firms of engineers, architects, doctors, dentists, accountants; in the "not-for-profit" sector are many small organizations serving government, charities and other voluntary agencies; other service sectors

organizations are found in real estate, financial and information services; and there is a large number of firms grouped around major industries both supplying and servicing manufactured goods. One of the characteristics of these organizations is a small office staff, low overhead costs, and a relatively simple division of labour.

In such organizations, typically, the owner is the boss and makes most or all of the major decisions and virtually all of the decisions involving any form of capital investment. Even electronic typewriters and copiers represent a capital investment of some significance for these firms. In this analysis, we look closely at communication problems which arose in introducing small computers into such organizations and assess the underlying social relations which affected these technical changes in the workplace. In particular, we suggest that gender and sex relations at work complicate the exchange of information across boundaries of hierarchy and authority. By sex we refer to the recognition of sexuality between men and women at work (see Hearn and Parkin, 1987) and by gender we refer to the product of socialization in sex-divided social and economic roles both as individuals and in the shared understanding of social relations at work. Such gender relations problems are deeply rooted in our culture and require explicit analysis.

### Theory

The concepts of control and authority used to examine gender relations in this study are described below but in the context of the workplace setting. The sociological work done on technology and organizational size is particularly useful for describing the context of this study because neither aspect of the work setting is gender neutral.

A useful definition of technology is to be found in Meissner's *Technology and the Worker, Technical Demands and Social Processes in Industry*. Although his study is of the traditional factory processes, his concept of workplace technology is relevant to more recent technological conditions since we are, as he was, "concerned with variations in the technical conditions of work and with the differences in worker behaviour associated with those variations" (1969:13). Meissner describes the technology of work as tools, machines, parts and materials as well as the equipment used to move these about, the buildings and parts of the buildings which house all these things and the people working with them. But he goes on to say that

when we speak of technical conditions of work—of the technology of work places—we refer to the fact that these material things (their presence, shapes, and interconnections) are the product of designs, the manifestation of the ideas of those who planned a process and the means of facilitating it... Ordinarily, when a man enters a processing or manufacturing plant, he finds all these steps completed. All he can perceive is the physical setup in operation. (1969:13–14)

The same is true, of course, of an office and a woman entering an office to work in a secretarial or clerical job. The equipment, the spacing of the desks, the lighting,

the other workers and the organization of the work are not her ideas, but the ideas of her boss. Among his ideas are conceptions of proper relations between the sexes, of a gendered division of labour, and of his power as a man as well as a boss. She also carries to work a "gendered subjectivity" (Fox, 1988) through which she perceives the setup into which she has been hired.

Size is a key variable determining the structure of organizations (Meyer, 1979). Control in the workplace is also strongly influenced by the number of workers. Even in an organization with a relatively large number of production workers the office staff may be quite small. The greater the number of layers of authority in the workplace, the less influence a secretary is going to have on workplace changes but in a small organization she can perhaps influence or shape the ideas of the boss through their day-to-day relations, whereas in a large organization she may have no such opportunity.

While the hierarchy is minimal in most small firms, does it also simplify patterns of control? Simpson's typology of workplace control includes five main variants: (1) simple control with two subtypes: direct and hierarchical; (2) technical; (3) bureaucratic; (4) occupational; and (5) self-control (Simpson, 1985).

The first, simple control, is characteristic of small organizations where as Simpson puts it

it is [control] of boss over worker, face to face, untrammelled by rules and wholly arbitrary if the boss so desires. When a firm gets too big for the top boss to control everyone personally, hierarchical control is introduced with layers of managers each reproducing the simple form of control over subordinates (1985: 417).

Technical control "embedded in the technology of work" also operates in small firms such as in metal manufacturing firms where the availability of parts, and the demands of custom design dictate much of the direction of work in the office as well as the plant. Bureaucratic control, built of rules, formal rewards and punishments, and impersonal means of control is expressed in small organizations largely in the relationship with government. The demands of payroll deductions, reports to government, and abiding by regulations of all kinds unite small organizations against government. Bureaucratic control will be considered here as an element of the environment rather than internal to small organizations. But both occupational control and self-control, although they affect most directly the managerial and professional staff, are important in the dynamics of small offices. The owners or chief managers are by definition entrepreneurial and, often professionals and therefore using self-control as a means of dealing with their work and environment. As Simpson points out, most workplaces have some mixture of these types of control in operation.

Questions of both gender relations and sexual relations come into the question of authority in the office. As Hearn and Parkin (1987) have pointed out, the sexuality which underlies much of the authority relations of the organization have been ignored in the literature on organizational behaviour. There is, for example, a division of labour

in society between the sexes and this is carried into paid work in organizations. The distinction between the public and the private, an underlying premise of great importance in the study of gender relations, divides the instrumental activities of work from the expressive activities of domestic life. The presence of women in the workplace, however, symbolizes to many people the presence of domestic life, including sexuality.

Our purpose here is to show how gendered relations of authority and control in small organizations complicate communications between boss and secretary. This complicated communications problem has influenced the effectiveness of technological change. In discussing these complications, we will raise questions about the relatively unexplored topic of sexuality and communications in the workplace.

### Methods

In 1982–83, we carried out a study of technological change in a number of small organizations all based in southern Ontario. The hypotheses of the study dealt with questions of technological change and the information economy. Here we explore the unexpected findings of the study. This analysis is based on data collected in the case study phase of the research. Three types of cases were selected: firms that had decided to introduce small computers and had informed the employees but not yet brought in the equipment; those that had the equipment, but for one year or less; and those that had the equipment for more than one year.

Of an original twenty firms contacted who met the criteria for inclusion, twelve agreed to allow interviews with every member of the staff. We encountered difficulties in the interviewing in four firms, with the result that eight case studies were completed in full. These eight cases consisted of two metal manufacturing firms both of which had introduced small computers, although in quite different ways and for different purposes; a small financial institution which had made the decision but not introduced the machines; a real estate appraiser who had the equipment but for less than one year; and two not-for-profit organizations serving education, of which one had the equipment and one had only made the decision. In addition, one consulting firm had a second generation of word processing equipment and sophisticated telephone systems, and one service organization to industry had recently introduced one small computer into the office.

In every case, all managers were interviewed extensively about the reasons for their decision to introduce new equipment; the process of planning and consultation with the office staff; training; and their views of the problems, advantages and outcomes of the decision. All secretarial and clerical staff were interviewed independently for their views of the process of consultation, decision making, introduction of the equipment, reactions to working with the equipment and the outcomes for their work life and occupational futures.

The data reported here, then, are based on interviews with managers, and secretarial and clerical workers. In every case, the management representative was

male. With the exception of one secretary, all the other office workers were female. The age range was from nineteen to over sixty years of age. Interviews averaged about one hour in length with follow-ups in some cases. Since in order to have permission to interview workers it was necessary to see the bosses and since in such small organizations everyone knew everything that went on in the office, all subjects were aware that everyone was included in the study.

Our study was focussed on the offices of the organizations selected although there was a great deal of variation in the structure and relations. Some firms, such as the metal manufacturing firms or the service sector firm, had production staff ranging from fourteen to seventy, while others, such as the not-for-profit organization and the consulting firm, were composed entirely of the office staff whom we interviewed. Both not-for-profit organizations were closely linked to a network of organizations of a similar nature with whom they cooperated on projects and competed for contracts. The staff of the financial firm had customer contact as did the consultants. In short, while the office staff was small in all cases, the variety of contacts of the staff varied widely.

### Findings

In this section we explain first how control, authority, sex and gender operated in general in our eight firms and then illustrate the complex nature of gendered communications with two case studies.

In every office we studied simple control was most evident. Everyone knew everyone else by name, interacted daily and on an informal as well as formal basis. Management in every case regarded their staff as "family", in fact used that word to describe their relationships with their staff implying both affection and diffuse relationships as well as conflict and sensitivities. With one exception, simple control was direct. That is, while there was more than one person in management, there was no formal hierarchy. Everyone reported directly to the owner (manager) for any important matters even if her work was directly for another manager. The exception was found in the service firm (which cleaned uniforms for surrounding industries), where there was a formal hierarchy starting with the owner, then the senior operations manager and then the financial manager with staff reporting to each level of management. In short, the hierarchy of these firms was limited to one, or at most two, steps.

The relations between the boss and secretary in these organizations was consistent with the small size and technological setting of the firms. By and large, the relations were described to us in positive and personal terms. The secretaries reported that they liked their bosses, respected them and described many instances of personal kindnesses and understanding. The secretaries also reported that while each felt that she could get another job if she wanted one, during a period of high unemployment it was important to keep her job. No one questioned the right of the boss to introduce new machinery. No one had received—or asked for—more pay as a result of training to use small computers. Secretaries had unpleasant remarks about the other clerks and secretaries they worked with but none for their bosses. Most said that the boss was their "friend"

to whom they took their troubles. There was much joking in all the offices. Even allowing for the fact that secretaries knew their management were also being interviewed, much of the positive feeling toward the boss was clearly genuine.

Bosses were generally positive towards their secretaries who were described, regardless of age, as "the girls". They spent little time describing the personal relations that we heard of from the office staff, but did not deny friendly relations. In many, although not all, instances the boss would be addressed on all occasions as "Mr" while in all cases secretaries were called by their first names, a paternalism which typified relations.

The office staff went to considerable length to make themselves attractive at work. Unlike many word processing pools or large workplaces where women wear very casual clothes and behave as industrial workers, in these small offices all the office staff adopted highly traditional presentations of themselves in sexual terms. Their symbolic expressions of sexuality were commented on in jokes and compliments. In reflection of this, the men wore jackets and ties, although they removed their jackets.

While the job title and description was of secretarial and clerical duties, in these offices, as most others, women were responsible for making coffee (although not always for serving it which was pointed out to me as a sign of "equality"), for tidying up (although other women came in to clean the offices), and, above all, for solving the problems of interpersonal relations. The boss relied on the senior secretary to smooth over personnel difficulties, resolve disputes among the staff, and deal with "private" matters which intruded into office life.

What we found, then, was a simple hierarchy with direct control based in part on ownership and skill but clearly delineated by gender and sex differences.

Each of the firms we studied was different from the other. To focus on the problems of technical change associated with communication, we will illustrate the situation with two cases. These represent in clearest form the situations involved in the decision to buy new automated office equipment and the process of implementation as it was experienced by the office staff and management. They provide material for the deeper analysis of the problems of communicating across the hierarchy of authority implicit in gendered relations at work.

### *Case One*

In a medium-sized town outside Toronto, we studied a small office of real estate appraisers. The firm consisted of two appraisers and two secretarial staff. The appraisers were both men and the office workers women. All the members of this firm were highly informal and congenial. Appraisers are out of the office a great deal to carry out their work and the office staff are left in charge. The skilled knowledge of the appraisers is transferred to official forms for the land registry office and clients and files kept. As the forms are quite complex but routine and as many records must be kept,

small computers represented a major advantage for the firm over electric typewriters; copiers over carbon paper copies.

Two features of the environment strongly influenced the owner of this firm to invest in small computers. First, he had read a great deal about the labour-saving advantages of small computers in the trade journals and newspaper and, in general, he considers himself to be a progressive sort of businessman. Second, the recession was having a major impact on the local real estate market and therefore his business and he was anxious to perhaps lower overhead by reducing his staff to one secretary. At the very least he wanted to reduce the amount of overtime resulting from the nature of his business, where the appraisers often return from making appraisals after business hours and have to complete the paper work as soon as possible. For this reason, the secretaries were often asked to work evenings and weekends.

Several months before I arrived to conduct interviews he had driven to the United States for an industry conference and attended demonstrations of the use of small computers in real estate appraising operations. In the enthusiasm of the moment and without any instruction on their use, he stopped on the way home and bought a small computer and printer. When I arrived in the office they were still sitting in boxes on the office floor. Neither of the secretaries had any idea how to operate them and no one had any time to find out. The owner was upset by this, since he had been assured that it was simple and "user-friendly" equipment, and since he was paying for the equipment on a monthly basis. He was inclined to think that his secretarial "family" was either stupid or recalcitrant for not having set them up. He teased them about it in my presence in a sex status fashion, i.e., being women they could not master machines.

Several months later, I returned to interview everyone again. By now the equipment was in operation, located in the owner's office. The owner's wife was replacing one secretary who had left. The other secretary had learned how to operate the machine but by an expensive route. The vendor had been prevailed upon to set up the equipment, find the right software for it, and teach the secretary enough to produce the necessary forms and letters. The owner himself had not learned to use the machine nor been much involved in helping the secretary with its use. On the contrary, when he returned from the field, he would call the secretary into his office and dictate to her the information to insert into the blank spaces on the forms. In effect, the small computer was being used as a typewriter. The only difference was that the completed forms looked better. The relations between the secretary and boss had not changed at all, except that now she had to work for both appraisers so she worked harder. Specifically in this instance, the boss/secretary relations were also male/female relations filled with teasing and the frequent expression of masculine dominance. Part of this dominance was expressed in the organization of the work and the stated division of labour: secretaries type and bosses dictate!

Yet the owner continued to talk enthusiastically about the prospects for office automation. He had not thought about investing in equipment with compatibility with the land registry office to save time and searches; he did not consider it worthwhile to

learn how to operate the computer himself so that he could complete the forms directly when he returned from the field; he did not keep his financial records on his machine. He was extraordinarily busy trying to get and finish all the work he could to keep his business alive.

The two secretaries in the first interviews were bemused by their boss. They rather liked his boistrous ways and treated the equipment sitting on their floor as a sign of his inability to cope with their work. On the other hand, they were not afraid of computers which they considered the modern way—their children were learning how to use them in school. In the second interview, the secretary had learned to use the computer after about three months of struggling with the manual and the vendor's agent. She could do "nothing fancy" on it, but her boss could "do nothing and he's a man". Neither secretary, nor the other appraiser, had been consulted about which equipment to invest in. It had simply arrived. The other appraiser, having no access to the machine, had not objected very much because he regarded it as a matter between the secretary and his boss. He, too, thought that the future of new technology was very bright and seemed unaware of the barriers that prevented its efficient use in this office.

### *Case Two*

In another small village outside Toronto is a firm which represents the other end of the spectrum of the introduction of office computers. This firm was owned and managed by an engineer who specialized in complex custom jobs in metal manufacturing. Seeing the possibilities in computer-assisted design as well as record keeping, inventory and word processing, this man had returned to university to study computer science on a part-time basis for two years while he designed the system for his business. His staff consisted of one other engineer hired specifically to work on the CAD system, a senior secretary/receptionist who did his personal work and who had been with his firm since the beginning, and two other clerical workers. One kept track of inventory for the shop floor; the other did payroll and general office work.

The CAD side of the system ran on one computer while the office records side had its own system. The owner spent twelve months studying the hard copy produced in his office before designing and order equipment for his information systems. This meant consulting at length with each of his office staff about the nature of her tasks and the order in which she did them. In addition, each of the office staff was sent at his time and expense to the local community college to learn the basics of computing and how to run the equipment in place. When the recession of the early 1980s hit this business, the owner used his new systems well. He told me that with his computer equipment he could produce ten times the number of bids he could have produced otherwise and so he was keeping his orders at about the pre-recession levels although going much further afield to get them. No one was being laid off, although everyone was working harder to achieve the same results.

As always in small business, he had tried to keep overhead low. Since this was a stand alone system, time had to be shared between the clerk entering inventory and the

clerk running payroll and financial records. Between inventory and payroll, the system worked quite well, but keeping track of orders in production was another matter. Each new order was entered as a new file, the parts required recorded for inventory, the hours needed on the shop floor estimated and recorded for payroll. As each order was processed, the stage in production was recorded in the file.

This seemed to be a model operation. There were evident close relationships between all office staff and the two engineers. Their friendships extended well beyond the workplace to sharing family occasions, spending Christmases together, and the exchange of intimacies. Nonetheless, after spending some time in the office, in one interview with the senior secretary I came across an incident that showed a major flaw. Many of the firm's customers were repeat customers. Over the years, they had built up personal relations with the secretary/receptionist and would telephone her for information on the status of their orders. In the hard copy system, she would simply check the file and pass on the information over the telephone. But now, if the computer was being used for inventory or payroll, she could no longer get access to the system. This embarrassed and annoyed her which is why I found her one evening writing up a set of written entries on the state of the orders to be kept in her desk drawer. She begged me not to tell the boss who would be offended. She had never told him, either because she thought he would not approve or because she didn't realize how computerized records worked, of her helpful relations with the clients. Now, despite their close, friendly relations, she was afraid to let him know what she was doing. As a consequence, she was doing much more work than he knew. Furthermore, she was keeping this from the other two clerks.

The other firms studied exhibited a similar division of labour and decision making between management and office staff. With one exception where the decision to buy a small computer was made by a consultative process (but the equipment had not yet arrived), there had been no consultation with office workers. But in all cases, the senior office secretary was in charge of the implementation of the new machines in working life both in terms of mastery of the machines and in the change in personal relations which their arrival entailed. In those instances where managers used the machines it was never for clerical or secretarial work. Thus a strict division of labour between occupations (and sexes) was maintained.

The gender division of labour was complete. While the males were responsible for deciding which office equipment to buy, the women were responsible for implementation into the social relations of the office. In every case, this was highly contentious. While no one complained about the new equipment (when it worked), in every case where there was more than one office worker, disputes arose about access. In none of these offices was there one machine/keyboard per worker. Time scheduling, the placement of the printer, and the new status hierarchy created by the machines were the problems. Management was not to be worried about these matters, I was told, but the senior secretary was to "sort things out". In Case One, the senior secretary remained unchanged and impassive on the subject, since the computer was used as a typewriter.

In Case Two, the senior secretary scheduled use of the computer for payroll and inventory along functional lines, and, as we have seen, adapted her own work to the changed circumstances. She continued to do correspondence on the typewriter. In the service organization, with three secretaries and a receptionist, and in the educational organization, in the financial institution, and in the other metal manufacturing firm, there were constant disputes among the office staff over access. Some learned how to use the machine more quickly than others and wanted more time. In most cases, time was parcelled out by seniority and status rather than function.

### **Analysis**

The question we must ask about each of these case studies is about the nature of communication between bosses and secretaries and what explains the problems which arose. Why did the secretary in Case Two fear telling her boss of the flaw in his system? Why was there a universal gender-based division of labour in such small firms? Why did the arrival of new technology not provide an opportunity to discuss the nature of the workplace? Was the lack of communication between boss and office staff based on knowledge, skill, gender or a more deep-rooted need to control sexuality in the workplace? There are several possible explanations for why there was so little two-way exchange of information.

The role of technology is associated in our culture with maleness and has been for a very long time (Sydie, 1987; Ortner, 1974). In this study the gender division of labour was absolute. In such small groups, there is no question of establishing a committee to look at such decisions. Not only were all those in decision-making positions male but, with one exception in the education organization where the equipment had not yet arrived, all those on office staff were female. The question of who had the authority to make the decision about new equipment was closed. With respect to consultation, however, the matter is rather different. Case One was typical of five of the eight organizations: even the other management or professional staff were not consulted about the equipment, merely informed. Gender, then, was not the only explanation for lack of consultation. In the other four organizations, some consultation took place. In Case Two, consultation was part of the planning. The boss heard the needs and planned equipment which he felt would meet those needs. The introduction of small computers appear to please rather than frighten the office workers. In most cases, they were greeted with enthusiasm. One cannot look to either the lack of consultation, nor fear of change as sources for the breakdown in communication we have described. Something intrinsic to the exercise of authority by the owner/boss needs exploration.

This exercise of authority is illustrated above by the role of the senior secretary in the mastery, training, and allocation of time on the computer as well as in sorting out the personnel problems and disputes which then occurred. It was these problems and the lack of communication across the hierarchy of the division of labour and gender which hampered the effective use of the new equipment. In short, the traditional problems of human relations most affected the use of the new equipment, knowledge

which was kept from the boss and accommodated in the female sphere. This finding is quite consistent with that of Beatty (1987) who studied the implementation of CAD systems. She found that human relations, not the equipment, slowed the pace of innovation and change. In Beatty's study as in this one, the nature of human relations in the hierarchy stopped communication about rational planning for the use of new machinery.

If the gender division of labour resulted in leaving the human relations and communications problems to the "girls in the office", one must ask why this would occur. The answer must lie in the entangled nature of gender and sexuality which Hearn and Parkin describe as both "power and paradox". It was clear in our interviews and observations that management members were maintaining social distance from the office staff, not only to stay clear of the "messy" problems of human relations but also to express something about their own status and power. Within the context of the small and intimate groups relations, these symbols of social distance were highly significant. These small groups had visual and verbal contact throughout the working day and often beyond it. They all knew each other's families well. They had social relations together. They appeared to like and trust one another especially on hierarchical lines i.e., the secretaries were less fond of one another than each was of the boss. Yet even in what appeared to be ideal relations of trust and knowledge, the boss did not really know his secretaries' relations with his clients enough to put this into the system and other bosses did not know enough or feel comfortable enough with their "girls" to sort out the interpersonal conflicts that reduced productivity.

In short, the technical conditions of work described by Meissner were already laid down and not subject to influence even in a period of change, not because of lack of communication between boss and worker so much as the social distance between men and women in the particular tensions of the workplace. This social distance was expressed in sexually defined roles that included communication in terms of power and authority contained not only in the boss/worker roles but, at the same time, in the man/woman roles.

In the introduction of new office machinery there was a culture/nature division (Sydie, 1987): the males dealt with the technology, planning and implementation, while the females were to learn to make the machines work and adapt them into the social relations of the workplace. Furthermore, this division of labour in the implementation of technological change reflected the basis of power and authority. The men had knowledge and capital. The women had commitment and interpersonal skills. This was taken for granted by both the men and the women. This classic division of labour underlies all the major works of sociological theory and has been entrenched in social thinking for generations (Sydie, 1987). And the difference between the content of gender roles (what men's work consists of and what women's work consists of) and the expression of it (how those roles are enacted in daily life) is influenced by sex status and, therefore, sexuality. This is demonstrated in the choice of language, both spoken and body language, in dress and in demeanour. As Hearn and Parkin point out,

organizational sexuality is coming to be considered something to be managed and since "the secretary is perhaps the archetype of the organisational sexual stereotype...both obscuring and parodying the issue of sexuality" (1987: 145), this analysis has shown how in the tensions of a small firm the problems are communicated by symbols, organizational structure and social hierarchy.

### Conclusion

While small organizations provide opportunities for diffuse and intimate relationships unavailable in most large organizations, they do not reduce the more general problems of communication between male and female roles inherent in our culture. Not only is this expressed in the well-researched gender division of labour, or occupational segregation, but also in the sexual expression of roles at work, an expression which involves a recognition of power and authority as well as of dangers of transgressing boundaries which must be maintained in occupational roles. In fact, the very intimacy available in the intense relationships of small organizations may reinforce traditional expressions of sex differences in both workers and bosses. This maintains the social order of a separation between the public and private, the home and the office, the power of men and subjugation of women which has been intrinsic to Canadian culture for generations (Sydie, 1987; Prentice et al., 1988).

Whether the new exploration of sexuality in organizations and in relations of power and authority does explain these workplace relations in small firms cannot be determined with these data. What is clear is that the forms of explanation based upon classic explanations of organizational behaviour are inadequate.

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