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Telework As Restructured Work

The issues of technological restructuring are altering not just our jobs and our work, but our language, consciousness, and identity (Menzies 1996, xiv).

In the ten years that I have been investigating telework I have grown increasingly sceptical of the message that promotes technology as the panacea for the drudgeries of work. As technology, in the form of computers and advanced information and telecommunications systems, permeates every aspect of society, there seems to be little critical discourse on its impact on the way we conduct our daily lives. A television commercial for a new computer a few years back typifies the intense mythologizing that surrounds our use of technology: a woman, professionally dressed in a business suit, is seated in front of her computer concentrated on work while several apparently happy children play at her feet. Fast forward to the year 2000 and a photograph accompanying a newspaper article offers a similar message: a contented home-based worker sits in front of her computer surrounded by her playing children (Gram 2000). The implicit messages both of these images conveyed to me were first, "We (women) can have it all," and second, "Technology is a benign tool." While my own experience has demonstrated to me the difficulty of combining work and family life and the powerful influence that technology has in ordering spatial, temporal, work, and interpersonal relations, few studies have investigated this on a household level.

In the restructuring of work that is occurring to address the socioeconomic priorities of the economy and workforce, telework has become a prominent strategy for employers and policy makers. Telework, typified as work performed with the help of information and communication technologies, often located at a distance from a main office site, includes a range of working relationships: employees connected to corporate networks while working from their homes or other remote locations, such as telecentres or client offices; self-employed consultants usually working from home, or home-based business operators operating businesses from their homes; independent contractors or self-employed subcontractors who rely on ICTs (information and communication technologies) in order to carry out their work; and workers, whether directly employed or outsourced, located in back offices

or call centres, linked telematically to employers' central offices. The types of work and the locations that permit telework are highly conducive to meeting the increased demand for flexible work arrangements by both workers and corporations.

Telework (or "telecommuting" as it also called in the United States), as distinct from other forms of work based in the home, is defined as work-related substitutions of telecommunications and related information technologies for travel (Huws, Korte, and Robinson 1990). Telecommuting came into prominence in the 1970s as a work option that reduces dependence on transportation (Mokhtarian 1991a; Nilles et al. 1976), but it is of interest now to both the private and public sectors because it produces a mobile, flexible labour force and reduces overhead costs (Huws 1991). Neither of these terms always implies working at home, as satellite offices or neighbourhood telework centres close to employees' homes, equipped with telecommunications equipment and services, can substitute for the commute to a centralized office.

Any large-scale telework movement can be attributed to existing economic conditions as well as technological advances. The internationalization of the economy has forced North American companies to try to cut labour costs to compete against companies who are producing cheaper, better quality goods elsewhere. The transformation from an industrial to a service economy has created many jobs that can be done independently of a centralized facility. Technological change in the form of advanced telecommunications technologies has made it possible to transport a variety of jobs, including data entry, offshore. Offices in North America are increasingly becoming automated, with a projected loss of management and clerical jobs. In order to remain competitive, companies are creating a two-tiered workforce of core and peripheral workers. While a core of full-time salaried workers remains, temporary workers are hired on a contingency basis. For many of these workers, the home becomes their work site.

The family is also undergoing structural changes that are contributing to the increase in telework. With dual-earner or female-headed families increasingly becoming the norm, the boundaries between work and family have changed. The burden of unpaid domestic labour, however, still falls primarily on women. Because of their double burden, women have sought flexible ways to work, including part-time work and self-employment. Currently, woman-owned businesses are the fastest growing segment of the small business population. The home provides the workplace for many of these women in business for themselves.

Two critical factors in the analysis of telework are who controls the information (i.e., who sends information to whom) and how the technologies can be manipulated. The activities generated by information technologies are part of larger societal processes that are locally situated in the home.

There are now numerous modes of electronic communication between individuals, corporations, and the global society that can originate from the home or other mobile work sites. Some of these interactions allow for decentralized information gathering and decision making, while others reinforce centralized and hierarchical structures. Activity patterns depend upon an individual's economic and information resources, and on the temporal and spatial constraints imposed on him or her.

This book analyzes the experiences and practices of teleworkers, including employees, independent contractors, and self-employed entrepreneurs, who use ICTs in the course of their work. It describes the socioeconomic environment of "flexible" employment and economic restructuring under which this form of work is being generated in North America. Recognizing that diverse forms of microentrepreneurship and home-based work are well-established economic strategies, I strive here to articulate the differences and similarities between informational at-home and/or distance work and other forms of work.

I argue against a technological determinist stance that obscures a class and gender analysis, placing telework within the framework of the different work relationships that affect an individual's economic and information resources and the temporal and spatial constraints imposed by household responsibilities. Gender becomes significant in understanding the experiences of teleworkers because gender differences are prevalent in the employment status of homeworkers. Moreover, often female at-home workers have the dual responsibilities of paid work and family, while male home-based workers primarily view themselves as engaged only in paid work. These different sets of perceived responsibilities affect the experience of working at home.

The discussion in the rest of this chapter locates telework within the context of the flexible labour market precipitated by changing socioeconomic and domestic priorities. It is shown that women are the most affected by this labour market and the most vulnerable to its consequences. In addition, women's daily life patterns are influenced by the private/public dualism manifested in our cities, which impedes the legitimization of women's home-based work activities. In reconceiving these dualities I argue that these distinctions do not represent people's lived experiences, and that the roles assigned based on these dualities do not reflect the fluidity of our society. Roles may vary situationally, but it is identities, those attributes of a person that give meaning, that help sustain us in our increasingly complex sets of relationships, especially in work practices. Telework is a particularly interesting example of the immersive nature of the relationship between work and technology in creating "identity." In certain instances, however, telework is also a strategy of resistance to the totalizing nature of work. The assumptions and myths about telework and its causes clearly need to be dissected.

Flexible Labour

Labour flexibility has become a significant trend in workforce profiles in both developed and less developed countries. This flexibility, however, differs under varying labour regimes and at varying skill levels. It is assumed that post-Fordist capitalism requires “flexible specialization” to meet diversified and specialized markets. Burawoy and Lukács argue to the contrary that “flexible specialization under capitalism is less an economic imperative and more a political stratagem to elicit consent in a period when middle management is under assault. It becomes a means of further expropriating control from the direct producer” (1992, 20). Haraway (1990) identifies this situation as the “homework economy.” While she includes the literal interpretation of homework, such as home-based electronics assembly, she also broadly defines the restructuring of work with characteristics formerly ascribed only to “female” jobs, such as vulnerability to exploitation and erratic work schedules.

International studies have noted that women generally have been affected differently than men by the fluid economic and social landscape of the restructuring that has been occurring worldwide (Aslanbeigui, Pressman, and Summerfield 1994). Women have had to bear a disproportionate amount of both paid work and unpaid domestic work to maintain their households. Castells (1996) argues that it is their flexibility as workers that has resulted in the expansion of women’s paid employment. This flexibility in schedules, and in entry and exit from the labour market, has resulted in women constituting the bulk of part-time and temporary employees, and a significant share of the self-employed. Nevertheless, this flexibility is at a cost in stretched time and resources (Hochschild 1989, 1997).

The gender and ethnicity dimensions of flexible production techniques are reflected in the participation of women and immigrants in the workforce, mostly in lower-paid work involving inferior working conditions (Mitter 1992; Cohen 1991). These gender- and ethnic-specific labour practices often rest on a revival of such techniques as subcontracting and family labour systems that involve patriarchal management structures and homework. Such practices make it easier to substitute lower-paid casual female labour for that of more highly paid and more difficult to lay off core male workers (Harvey 1989). These unregulated jobs are often concentrated in isolated and hidden work sites in homes and garages. The consequence of their invisibility is the prevalence of substandard working conditions and the potential for exploitation from employers and contractors.

Not all flexible workers, however, are as vulnerable as those described above, and homeworkers cannot be treated as a single group. Those teleworkers who are highly skilled and employed, rather than on contract

to their employer, appreciate the control over their time that working at home affords them. Carnoy, Castells, and Benner (1997) take a nuanced approach to describe flexible labour in the North American context. This encompasses both voluntary and involuntary labour practices, and includes temporary and part-time workers, the self-employed, and workers employed in business services. While recognizing that often flexible labour is positive for both employers and workers, they point out that it can become onerous for workers “denied access to the standard, or traditional, labour contract” (31). Using a case study of workers in California’s Silicon Valley, they show that though flexible employment can benefit mobile, high-skilled workers in ICT professions, the flexibility of low-skilled workers (such as janitors working on contract) benefits companies, resulting in job losses and reductions in wages and working conditions.

A study of low-skilled information-processing workers in less developed countries (Pearson and Mitter 1993) found a predominance of women in low-skilled employment, while the majority of high-skilled workers were men. While conceding that information processing offers the developing world significant employment opportunities, Pearson and Mitter are concerned that “in the long term some jobs will be upgraded and new technical skills and skills combinations will be needed; but other jobs will be downgraded and the conditions of work for ‘peripheral’ workers are likely to deteriorate” (52). Menzies eloquently describes a similar Canadian telework model of “computer-defined and computer-controlled tasks dispatched to remote worksites” (1996, 110). In her critique of the foundations of this model she states, “They represent a shift in the distribution of power in our society toward computer systems and those who control them, and a new version of class polarization – here across the digital divide of technological enfranchisement or disenfranchisement, of working with computers or working for them. They also represent a new form of social control: from a human context of industrial relations to an almost entirely cybernetic context.”

As illustrated by these studies, a consequence of the shrinking of the welfare state and the spread of flexible production techniques has been growing social polarization. This is largely based on the decline in the bargaining power of labour relative to capital and the subsequent bifurcation of the labour force into a small number of “good jobs” (i.e., secure, long-term, well-paying, unionized jobs) and a much larger number of “poor jobs” (i.e., part-time, part-year, low-paying jobs without benefits and unionization) (Duffy, Pupay, and Glenday 1997). Workers in “poor jobs,” in the flexible or floating labour force of homeworkers, domestic workers, independent contractors, and agricultural workers, are a sizable percentage of workers worldwide and are rapidly increasing in the North.

The New Frontier: The Mobile Workplace

An estimated one-quarter of the working population in North America does some or all of its paid labour from home or close to home. Many more dream of doing so. Working at home is increasingly mythologized as the new frontier – an individual's ultimate expression of autonomy, freedom, and control – made possible by telecommunications and information technologies. While there is a long and global tradition of home-based workers, the use of computers, modems, and faxes to work at home or close to home, variously known as “the electronic cottage,” “electronic homework,” “telework,” “telecommuting,” “networking,” “distance work,” and “flexiplace,” takes on such significance in predictions about the future of work that it is difficult to escape the suspicion that this trend has acquired a symbolic stature beyond its actual prevalence. Excessively optimistic predictions of home-based work do not reveal, however, the millions compelled to work at home by socioeconomic necessity and technological redundancy. For them, home-based work is a survival strategy and a form of resistance to societal forces beyond their control. Bringing work home affects every aspect of their daily lives, blurring boundaries between work and home life, workplace and home, public and private space, and male and female roles.

There is a tremendous amount of hyperbole about the promise of the “information highway” and its impact on daily life and work patterns. Telework and home-based employment offer millions of people liberation from unwanted commutes, more flexibility and control over time and resources, and the fostering of more cohesive communities. This promise, though, must be tempered by the reality of the day-to-day lives of people working in homes and communities often irreconcilable with this vision of the future. The flexible, isolated work site or the mobile workplace has implications for the future of work and societal relations. Telework and home-based employment are work practices related to changes in technology and family life, precipitated by the current global economic restructuring, which has local consequences for the reshaping of spatial forms and social dynamics. The rising number of information-based and service-related occupations and jobs, increasing contract work and part-time employment, widespread use of computers and telecommunications, corporate restructuring, and workers' desire to balance family and work are all factors reinforcing an increase in flexible work patterns.

While existing literature covers a broad spectrum of issues related to telework and home-based employment, from the sweeping speculations of the futurists to dramatic accounts in the popular media, relatively little research deals directly with the issues addressed in this book. This book is about the experiences of telework and home-based employment, and how these forms of work are manifested in people's daily lives and environments. It addresses two questions that pertain to the social and spatial

impact of this reconceptualization of work practices: how do people accommodate telework and home-based employment in their use of time and space, and what is the role of home, work, and community life in this context?

It is estimated that in the United States from 20 million to 38 million people, or 30 percent of the US labour force, work at home at least part of the time (Deming 1994; US Department of Transportation 1993). Telework has grown in Canada from 600,000 people in 1991 to one million in 1996 (Statistics Canada 1991a, 1997), and some estimates based on a more all-encompassing definition find two million Canadians – nearly one-quarter of the working population – doing some or all of their paid labour at home (Orser and Foster 1992). While this shift in employment patterns is predicted to have a considerable influence on patterns of daily life, the planning and design of residential communities have not for the most part recognized this occurrence.

Twentieth-century cities have been planned for home/work separation, and in particular planned to make work-related activities efficient based on their separate location. However, residential planning based on the principle of separating home and work activities may be outdated for an increasing number of North American households. When the location of work shifts for a sizable percentage of the labour force, planners and designers need to reconsider the policy and design implications of the home/work relationship. The public and private sectors' increased interest in the nature and extent of paid work conducted at home reflects its potential impact on economic development. Introducing opportunities for work into residential communities in the form of telework/telecommuting, home-based employment, satellite offices, and neighbourhood telework centres has important implications for land use, urban form, the housing industry, transportation, and services. Challenging the live/work dichotomy and reshaping existing development patterns brings the role of communities and the function of regulatory mechanisms under scrutiny. Equally important are the social implications of a work life that is dissociated from an organized workplace and dispersed to a variety of locations.

The home is becoming the nexus for a whole range of activities, making for an increasingly home-based society. A retreat to the home is occurring in the areas of work, socializing, entertainment, and education. This retreat is fuelled by fear and uncertainty about the outside world and by the convenience of technological fixes. Home-based activities that transform the home into a sphere for both production and consumption have the potential to decentralize resources and provide flexibility and control over both work and home life. At the same time, such activities could atomize and isolate homeworkers from interactions in the larger society. The societal consequences of a solitary work life need careful consideration.

While home-based work does have negative effects, at the same time it offers important opportunities to reorganize our homes and communities. Integrating opportunities for work such as telework centres into residential neighbourhoods is a way of revitalizing single-use areas and reducing the enormous energy and transportation inputs required to maintain North American lifestyles. While replanning residential communities with work in mind will not alleviate all of the problems of our increasingly complex environment, it will go far toward creating more sustainable, humane communities.

This book is based on a framework that acknowledges the tensions between individuals as agents of change and the wider social systems and structures in which they are embedded. I argue that though home-based work has become a significant work trend (as recent North American census figures indicate) it is not the panacea for the often conflicting demands of home and work life. However, the importance of exploring the impact of home-based work on urban life should not be underestimated. Home-based work challenges existing conceptualizations of work and domestic life, and public and private space, leading to new interpretations of the urban realm. To this end, this book contributes to the debate on the rethinking of our socioeconomic and environmental priorities in the urban sphere by investigating the impact of telework and home-based employment on daily life patterns and the use of homes and neighbourhoods, and examining the implications for the planning and design of homes and communities.

The Private/Public Dualism

This book is situated within the growing literature on gender-sensitive planning and design. For the past thirty years, feminist planners have provided a valuable critique of traditional planning practice, rethinking what knowledge is relevant and whose actions we are planning for (Sandercock 1998; Eichler 1995; Greed 1994; Sandercock and Forsyth 1992; Moore Milroy 1991). By emphasizing a multiplicity of experiences, they have identified the importance of reorienting community planning practice from a focus on land use to a more holistic approach that includes issues such as child care, mass transit, safety, and affordable housing. Feminist theoreticians have, for example, drawn attention to the male bias in traditional land use planning (Hayden 1981, 1984; Mackenzie 1988). They challenge modern North American cities excessively codified by zoning restrictions, and dualistic divisions between private and public space, and between home and work environments (Ritzdorf 1990). The benefits of such gender-sensitive approaches to planning are meant to accrue to the entire population, not just women.

With the redefinition of women's and men's roles, as is presently occurring with the dual-career household and multiple definitions of family,

approaches to planning practice have to be cognizant of the variety of roles and of the fact that these roles are socially constructed and constantly changing. By considering the needs and preferences of diverse groups, planning can more significantly address their concerns. Correspondingly, the separate sphere ideology that defines the home in opposition to work and as a refuge from the public world is being reexamined with the advent of technological, economic, and social restructuring. Cities are now being characterized in terms of the interconnections between public and private spheres and between socioeconomic and cultural phenomena (Andrew 1992; Moore Milroy and Wismer 1994).

Such approaches acknowledge biases in decision making; planning is not value-free but very much ideologically bound (Little 1994). This acknowledgment is an important step in breaking down the belief that planning is objectively neutral. These approaches also recognize the diversity of human experience and the variety of ways of knowing and constructing knowledge. In this context, communities are not just spatially defined but are sets of resources that provide opportunities and impose constraints. The feminist approach to architecture defined by Franck (1989) includes many elements desirable in planning as well: connectedness and inclusiveness, an ethic of care and value for everyday life, values of subjectivity and feelings, values of complexity and flexibility, and cooperation and collaboration. While many of these concepts may appear to be utopian, when examined closely they constitute a way of conceiving social and spatial relations that challenge the socially imposed dualities within the urban realm.

Moore Milroy (1991) maintains that planning decisions in North America are based on a narrow definition of work that elevates the waged form of work, done at particular times of the day and week and in specific locations, to a higher status. In this perspective, cities are planned as places of work, and neighbourhoods as residual places. Limiting the conceptualization of work to formal employment ignores the unpaid work done in homes and communities, and the increasing diversity of paid work done at home and in mobile locations. This bias defining work as separate from domestic activities is a fundamental organizing element of urban structures, codified by zoning restrictions. Pateman (1989) argues, as many do, that the public and private spheres are inextricably connected and interdependent. Their interdependence, however, is not mutually complementary but hierarchical, based on a relationship where the public sphere exerts more power in decisions and actions (Moore Milroy and Wismer 1994).

Boris (1994) argues that such dualities as home and work, and private and public, are false dichotomies that impede recognition of home-based working women as wage earners. Family obligations, power relations within a family, class, and race, as well as public policies such as taxation, immigration, and welfare, affect a woman's position in the labour market. She further

concludes, "By sustaining the association of women with the home, policymakers place a barrier in the way of reorganizing social life to recognize the earning and nurturing obligations of us all" (365). An examination of the movement toward telework by individuals, private corporations, and public institutions illustrates the interconnections between the private and public spheres, and the hierarchical relationship between them.

Identity, Power, and Resistance

Haraway dissects these dualisms further. She argues that the distinction between public and private domains in characterizing women's lives is totally misleading and instead suggests a network or integrated circuit image that encompasses spaces, identities, and "the permeability of boundaries in the personal body and in the body politic" (Haraway 1990, 212). Her "cyborg" image, a hybrid of machine and organism, points the way to a new theoretical understanding of feminism that embraces technology in order to challenge the "informatics of domination" (223). Butler (1993) challenges the notion of binarism even more strongly, arguing that such a notion operates counterproductively in gender and feminist discourse and asserting that individuals have the power to refuse to play their gender roles, thus subverting power systems. She claims that identities do not preexist their "performance," thus emphasizing human agency and the importance of individual actions and resistance. Butler stresses the lack of a stable self and the fluidity of power.

Castells, while concurring that identity is important in understanding contemporary society, offers a different interpretation. Identities, Castells asserts, are distinct from roles in that roles are "defined by norms structured by the institutions and organizations of society" while identities are created by "the construction of meaning on the basis of a cultural attribute, or related set of cultural attributes, that is/are given priority over other sources of meaning" (Castells 1997, 7, 6). Roles vary situationally, but in a globally fluid networked society identities are sustained over the time-space spectrum. Castells typifies identity-building in three distinct ways: "legitimizing identity," "resistance identity," and "project identity." "Legitimizing identity" is a strategy of the dominant institutions of society to extend their domination, "resistance identity" seeks to subvert the dominant institutions, and "project identity" seeks to transform them.

Butler's and Castells' different arguments both critique Goffman's (1959) analysis of roles, most importantly in their understanding of resistance. Goffman argues in his discussion of roles and role settings in daily work encounters that work is a performance with an explicit script governing behaviour. In such an environment an alienated worker can potentially be liberated through an improved work culture and workspace. However, our

greater understanding of human agency in the making of meaning diverges from this interpretation (Giddens 1991). Structuration theory, focusing on the relationship between human agents and the wider social systems and structures in which they are embedded, objects to the portrayal of people as passive actors within determined structures. Instead, it recognizes the importance of the knowledgeable human subject as an agent of change while at the same time examining the structures within which the human agent operates. It is through the specific acts of individuals that meanings are created in society.

Resistance strategies are part of that meaning making. Resistance, as tactics focused on the self-construction of a new identity rooted in human dignity, is a continuing theme in discussions of work practices (Scott 1990; Ong 1987). The Luddites, a nineteenth-century society of textile workers who tried to sabotage the mechanization of their industry by breaking their machines, are still recalled when people question the increasing use of technology as a substitute for human labour (Bailey 1998). Workers in situations in which they have very little control can manifest resistance through a whole host of behaviours. For example, Koch-Schulte's study (2000) of resistance among call centre workers found that they used worker-managed computer pacing when the stress became too onerous.

Power is central to any discussion of resistant work practices. Foucault (1980) argues that power is diffuse. It is the product of a "net-like organization" that is "something which circulates, or rather as something which only functions in the form of a chain ... In other words, individuals are the vehicles of power, not its point of application" (98). Zuboff (1988) applies this analysis to workplaces relying on computer-based technologies and finds that "authority is used to shape conduct and sensibility in ways that contribute to the maintenance of current configurations of power" (1988, 222). Industrial factories were places where bodily discipline, regulation, and surveillance were taken for granted, but the monitoring ability of information technologies renders the physical presence of authority unnecessary. Increasingly we have to ask the question, Are we working *with* computers or working *for* them?

Our identities, as formed by the imperatives of a global economy, are now immersed in our relationship to our technologies. Telework and other forms of flexible labour fit into these new conceptualizations of workers. Nevertheless, within the apparently all-encompassing dominance of the global economy, individuals are exhibiting agency in navigating their lives and controlling how and where work is to be conducted. However, although resistance is integral to the social practices of teleworkers, any fundamental change will depend on transformations in the societal meanings and practices of work.

Assumptions about Telework

Among the assumptions about the trend toward telework that need to be analyzed is the assumption that the computer determines the decision to work at home. While the computer is enabling millions of people to work at home, the reasons that they are at home stem more from changes in the economy and the family (Christensen 1988a; Huws 1991). As Haraway concludes, "The homework economy as a world capitalist organizational structure is made possible by (not caused by) the new technologies" (1990, 208). Computer work is only one aspect of the range of work that can be, has been, and is being done at home. While telecommunications and information technologies are making it possible for work to be done almost anywhere, how the technologies are used and who has control of the information affect the impact of these technologies on our daily lives.

Another assumption concerns who works at home. The "electronic cottage," as it is portrayed, is primarily an upper-middle-class phenomenon for people with financial resources and flexibility in employment (Toffler 1980). This image does not reveal the diversity of the home-based work population; increasingly, low-paid homeworkers are being hired on a piecework basis in a variety of occupations (Allen and Wolkowitz 1987; Rowbotham 1993).

A third assumption relates to where people work in the home. In contrast to the high-tech electronic cottage with its communications hub at the heart of the home (Johnson 1990), home-based workers have a variety of different environments based on their priorities and resources. A surprising number are mobile workers, often having several work locations other than their home. People are now working almost anywhere: at home, in clients' offices, even in their cars.

A fourth assumption is that home-based work allows more balance between home and work life. For some that might be the case, but for most, work takes precedence over other facets both temporally and spatially. Especially for women, separating home and work life becomes problematic, as they must cope with the responsibilities of child care, household maintenance, and paid work activities (Christensen 1988b; Duxbury, Higgins, and Mills 1992). In dissecting these four assumptions, differences in work status, gender, and economic class have to be analyzed. These variables affect the choices homeworkers make, the type of work they do, the locations they work in, and the amount of control they have over their time and resources.

Home, Work, and Urban Life

When the home becomes a workplace, the boundaries between work/home life, workplace/home, public/private space, and male/female roles become blurred. How these separate spheres and roles are interpreted by people

working at home affects the home as a social and physical setting. Since the Industrial Revolution, the home in Western industrial society has been defined in opposition to work as a refuge from the public world (Saegert and Winkel 1980). The home in late-twentieth-century North America provides both security and a focus for the identity of the nuclear family. It functions as a synthesizer of experiences, filtering out the uncertainties of the outside world and temporarily providing an atmosphere of well-being. It has also come to be a symbol of self-identity (Cooper Marcus 1995). Increasingly, however, for the urban household the home is becoming little more than a place to sleep, eat an occasional meal, and store personal possessions, as most waking hours are spent elsewhere. Home-based work is changing that pattern.

Though there have been few comprehensive studies that investigate the impact of telework, futurist writers believe that through homework using information and telecommunications technologies, the home is reemerging as a central unit in society with enhanced economic, educational, and social functions (Toffler 1980; Toffler and Toffler 1995; Naisbet 1982; Naisbitt and Aburdene 1990). These writers contend that powerful forces are converging to promote a massive shift of jobs out of factories and offices, and back to the home. They describe a decentralized economy based on the use of telecommunication technologies to produce and consume goods and services. Furthermore, the electronic cottage will foster entrepreneurship and self-employment, resulting in smaller corporations and new organizational structures. Moreover, because the creation of separate spheres for work and domestic activities after the Industrial Revolution was one of the causes of the breakdown of the extended family, the reversal of this separation is predicted to strengthen the family. It is believed that the electronic cottage will lead to greater flexibility in roles and more communality among family members. However, the futurists' rosy predictions are countered by critics with concerns about telework.

Just as information and telecommunication technologies can allow households greater freedom to select their community resources and interactions, these technologies can be used to achieve greater social control. In his writing on disciplinary power, Foucault described the role of the built environment as an instrument of power relations (Rabinow 1984). Though the modernist concept of transparent, flowing space and the use of large expanses of glass cannot be directly attributed to this control function, the transparency and open plan of office buildings and factories does allow for a high level of surveillance. New information technologies free surveillance from the limitations of direct vision; video cameras, telephones, and computers in the new "smart" buildings allow continuous monitoring and surveillance. Workers telecommuting from home can be subject to this same

supervision, effectively having their homes turned into “electronic sweatshops.” Home-based activities that transform the household into a sphere for production and consumption are part of a process of economic and social restructuring that opens up new possibilities for flexibility and decentralization while reinforcing centralized corporate control of the economy. Electronic homework is perceived as “a new frontier in the scientific management of society ... [in which] household activities of all kinds become subordinated to criteria of technological efficiency and rationalization” (Robins and Hepworth 1988, 159).

Within this context, critics of the optimistic visions are concerned that the increased computerization of the home will have dire social and psychological consequences because the range of services that will be able to be produced and consumed in the home will isolate individuals from interactions in the general society. Individuals in these homes will lead increasingly fragmented and isolated lives, ultimately contributing to the disintegration of community life. The household, they assert, cannot be isolated from the social context in which it is embedded (Castells 1985, 1989; Robins and Hepworth 1988; Swift 1995; Rifkin 1995). These critics predict that people will increasingly interact more on the basis of function and interest than propinquity (Webber 1964). Another common concern in the literature is that we are evolving into a bifurcated society of those who will have access to telecommunications and information technologies and those who, because of lack of education, skills, and resources, will not (Castells 1989).

Feminist researchers see certain advantages to telework for those in the population, such as mothers of young children, the elderly, and the physically challenged, who need or want to stay at home (Christensen 1986). Working at home may be one of the few opportunities these people have to earn an income, and they generally like the concept because they have no alternatives. However, there is a danger that home-based work will be viewed as a substitute for child care services. If more businesses provided child care facilities and if more flexibility in work patterns were offered, homework would perhaps not be such a strong option. There is also concern that for many women the nature of homework is exploitative. The trend toward piecework in the home may cause women’s working conditions and pay to deteriorate, forcing them into an unending cycle of work on both household tasks and piecework. Specific issues that have been raised regarding telework include financial exploitation of homeworkers, poor conditions of employment, lack of union representation, restrictive residential zoning, and reluctance by management to relinquish control over employees. There are problems also of spatial constraints and conflicts for people who live in small houses or apartments that are quite unsuitable for homework.

Though pressures in society are making home-based work necessary for segments of the population, some critics are concerned that the psychological problems of working at home have been underestimated (Forester 1988). Possible difficulties with working at home include lack of motivation and discipline, inability to organize work and manage time effectively, and problems in being a self-manager. In addition, many consumers have found that new information-based services (such as teleshopping) are not useful and do not fulfil their psychological needs. Homeworkers may have psychological problems that arise in relationships with their family or spouse, and they may have feelings of loneliness or isolation from colleagues and concern about social status, especially in the neighbourhood.

Organized labour opposes telework, arguing that the same issues that surround garment-making apply to information workers (Huws, Korte, and Robinson 1990). Though part-time work at home may be appropriate for managers and some professional employees, unions claim minimum wage and labour standards cannot be guaranteed for clerical and support workers in the home. Unions fear workers could be exploited in electronic sweatshops where they can be electronically monitored and kept in isolation from their colleagues. In an effort to avoid such exploitation, the AFL-CIO and the Service Employees International Union (SEIU) both passed resolutions for a ban on computer homework in their 1983 conventions (DiMartino and Wirth 1990). However, since that time the unions' position has weakened. In 1989, the Eighteenth Constitutional Convention of the AFL-CIO opted for legislative control rather than legislative ban, urging the establishment of appropriate new regulations on homework to prevent exploitation of workers in these settings (Mahfood 1992). In Great Britain, the white-collar trade union MSF (Manufacturing, Science, Finance) emphasizes that it is not opposed to new forms of working but wants changes to traditional working practices to be implemented by negotiation and agreement rather than management decree (Bibby 1999). Despite these efforts, both the public and private sectors are expanding opportunities for people to work at home and in other non-traditional work environments, such as prisons, with little (or no) regulatory control.

The assertion that telework will strengthen family life appears to be fallacious, because the futurists base their ideas on a simplistic vision of the preindustrial European family and its work patterns. This vision portrays the preindustrial family as an harmonious unit in which work and home life were seamlessly intermingled and communities were largely self-sufficient. Scholars of the new social history (Hareven 1977) have dismissed the traditional view of the family as a passive agent that broke down under the impact of industrialization and urbanization. Current research no longer analyzes the family as an unchanging institution, but acknowledges that

families have differed historically, having constantly evolved and undergone changes. Discovery of the family's ability to adapt to change has led to speculation that the family itself may have acted as an agent of change, preparing members for new ways of life. The family has never been an utopian retreat from the world; rather, it has been diverse and flexible, and has varied in accordance with social and economic needs.

The romanticized portrayal of the preindustrial European family has further confused the image of contemporary teleworkers by providing a speculative model of home life. This portrayal lacks an understanding of the work done in preindustrial cottage industries and the consequences of that work for the household. While cottage industries have been identified with artisans (usually men), the actual workers (usually women and children) in these industries were paid on a piecework basis and did "putting out" work on various components of the manufacturing process, such as cloth-making for master clothiers (Gregory 1982). Their supply of work depended on their employer, and all members of the family had to contribute for economic survival. For pieceworkers, the family life course offered little opportunity for choice because the family lacked control over their destiny and their household economy. Artisans, in contrast, were self-employed craftsmen who used their own tools and sold their services directly to consumers or wholesalers (Pred 1981). Artisans and their families had considerable flexibility in their everyday lives. The futurists have assumed that the experience of working at home will be similar for all individuals and families. But gender, the kind of work, and the degree of control a homemaker has over its execution affect the diverse experiences of everyday life.

In addition, the idea of the home as a place of nurture, comfort, and leisure within which work will be seamlessly integrated is contradicted by the daily pressures and living circumstances portrayed in current statistics. An estimated 28 million American women are battered by their husbands or partners each year, making the home a far more dangerous place for them than city streets. Rather than a utopian retreat from the world, the home can be a place of personal stresses and dysfunction.

With the shift of men's place of work from the home to the factory after the Industrial Revolution, the sexes were separated by time, space, and socially enforced role expectations. Home-based paid work is seen as a way of reintegrating sex roles and responsibilities. However, unlike those writers who focus on the impact of homework on the individual family and its dwelling, feminist theoreticians (Hayden 1984; Saegert 1980) question the notion of the separate spheres of home and work, and postulate a new paradigm of the home, the neighbourhood, and the city that supports, rather than restricts, the activities of working women and their families.

The role of the home and workplace for at-home workers is changing. In describing the home of the future, futurists have taken a technologically

determinist analysis that obscures the role individuals and society play in the process of change. The use of telecommunications and information technologies to generate and transmit information has the potential to decentralize resources and provide flexibility and control over both work and home life. At the same time, such technologies could individualize homeworkers and isolate them from opportunities in the larger society. Many questions regarding this phenomenon need to be addressed. How do workers adapt to the new form of workplace in the home? How does home-based work affect social relations both within the household and in the larger community? How do the activities of a home change and how is this change accommodated physically when people work at home? Generally, is working at home a viable alternative to other forms of work arrangements?

To begin to understand this trend, Chapter 2 describes a typology of flexible workers, and situates this internationally. This analysis is supported by data derived from three studies of teleworkers and home-based entrepreneurs conducted by the author in San Francisco and Sacramento, California, in 1990, Canada-wide in 1995, and in Vancouver in 2000, as well as other research. The research spans a ten-year period in which significant changes have occurred in organizational structures, technological innovations, and family priorities, impacting the way work is and could be conducted. The studies had significant findings regarding the mobility of this workforce, its distinct divisions according to work status and gender, and the tensions encountered in trying to combine work and domestic activities in the same setting. The following chapters amplify these findings and outline their implications for the social and physical environment of urban North America. Chapter 3 articulates the significant themes from the 1990 study and describes patterns of work and home life and psychological profiles of home-based workers using both qualitative and quantitative data. These patterns illustrate that often existing gender roles are not altered in the home, and the new role of paid worker is difficult to accommodate in it.

Chapter 4 describes the findings of the 1995 Canada-wide survey focusing on teleworkers and home-based entrepreneurs and demonstrates that home-based workers can not be treated as a single group. Work status, gender, and economic class affect experiences. In Chapter 5, a case study is developed to analyze the consequences of the networked economy on a particular locale, Vancouver, British Columbia. Findings reveal a bifurcated workforce made up of highly skilled, highly paid knowledge workers and low-skilled, low-paid pieceworkers made redundant by new technological capabilities.

Three interrelated concepts need more careful examination now that working at home could potentially alter how homes and neighbourhoods function: home, community, and sense of place. One of the recurring tensions in North American society has been between the values of independence

and individualism, and the values of community linked to the desire for connection and caring. The home in relation to its community setting has become the physical manifestation of the tensions that are occurring in the larger society. For home-based workers these stresses have become exacerbated. Chapter 6 examines several paradoxes in the relationship between home and work. Instead of promoting a natural wholeness to everyday life in which work and home life become a seamless fabric, the polarities between these two spheres are even more difficult to resolve when working at home.

Before the Industrial Revolution, working at home was the norm. Once the live/work relationship was severed, for most people, the home was redefined as a refuge from public life. Teleworkers must now carry out their activities in a home setting that does not support their new identity, and one that is vastly different from what constituted home for the cottage workers of the Middle Ages. While it may appear that home-based workers should have a stronger attachment to their immediate locale, the neighbourhood, than those who go elsewhere to work, this is not borne out by empirical evidence. As the studies presented in Chapter 7 demonstrate, teleworkers rarely use their neighbourhoods, especially in those neighbourhoods where there are few services and people during the day. Until there is a critical mass of homeworkers, and services supporting them, the neighbourhood will hold few opportunities for social contacts.

Correspondingly, home-based work activity raises questions about the nature of community. Some teleworkers, disconnected from their neighbourhoods and the social networks of office life, rely on computer networks for their social lives. These networks change their perception of their sense of place in the world, opening up opportunities for geographically wide exchanges, yet limiting these exchanges to those that are electronically mediated. As articulated in Chapter 7, information and telecommunications technologies are capable of creating "virtual" workplaces and communities in the privacy of the home. For people working at home using these technologies, the home is being transformed into an "information factory" where work can be created, processed, and disseminated, eliminating many workplace-related functions. Work in these home settings takes precedence over home activities both spatially and temporally.

The home for teleworkers is no longer a place of refuge, since work-related stresses become associated with the home. Moreover, though the home for home-based workers becomes more insular, it is no longer a buffer from the complexity of urban society. Individuals working in these homes may be isolated from the world outside their doors, and from other workers, but are inextricably linked to the global society. The concluding chapter makes a plea that the trend toward the atomization of work, home, and community

life be treated as a societal issue, rather than being portrayed solely as a matter of individual choice.

While the themes presented here might seem disparate, on closer examination they reveal a holistic portrait of the trend toward flexible work arrangements, their effect on people's daily lives, and the corresponding impact on urban patterns in homes and communities. The following chapters document the tensions between domestic and work life that are manifested when work is conducted at home: between the desire for flexibility and the tendency for work to become "out of control"; and between freedom and invisibility and isolation. The role of technology in precipitating these tensions becomes significant. The social and spatial relations that emerge describe a dispersal of activities away from traditional nodes and forms, a reconcentration in other nodes in other ways, and a polarization and disparity based on gender, class, and work status.