

CHAPTER 1

Introduction

The building was located just behind the tracks of the Long Island Rail Road. I had passed by this work location dozens of times without knowing what it was. Behind the wheel of the truck I rode in was my guide for the day, a bearded, barrel-chested Irishman who was a chief steward for the CWA when he wasn't laying cable for New York Telephone. We rode in his truck between repair sites and he showed me the ropes.

It was barely seven A.M. and I was hardly awake, but he was raring to go. We parked his truck in the company lot and went into the garage where telephone craftworkers started their working days, 'shooting troubles' in the system's grid of cable. We leaned on the company's trucks, drinking coffee while two dozen workers awaited their trouble tickets for the day. It was a rowdy but congenial bunch. One man showed up wearing a Bart Simpson mask, prompting his co-workers to remark that he was looking much better than usual. Another man served as the good-natured butt of jokes, most of which involved his ability to sleep anywhere at any time. A cigar box filled with dollars made the rounds—the pool for the workers' game of Lucky Buck. The union had arranged for my guide and I to trail a craftsmen on the job, beginning a crash course on telephone work. We got our trouble tickets, climbed into the truck and slowly drove off, my teacher lecturing on the ways of the working man while I studiously made notes.

By this time I had grown familiar with the leaders of this local union and the word had apparently spread that I was someone who could be trusted. Thus my guide was not shy about revealing the least flattering sides of the telephone workers' subculture. The workers' habits were a serious concern among both union and company officials, it developed, at least partly because splicers and other craftworkers sometimes like to congregate at eating and

drinking establishments during the course of the working day. Said my guide: "You can get away with a lot on this job if you want to." He was unabashedly proud of that fact—proud that craftworkers had maintained substantial residues of control over their own labor, sometimes working feverishly to put a cable back into service before returning to their garage, yet retaining their ability to rest when the situation allowed. One man recalled enjoying the coming of warm weather by visiting the region's beaches and "watching the bathing suits" after an exhausting stint of work underground.

This day's tour was in fact quite hot, but there was little time out for fun. The splicer's job, I would learn, remains among the most arduous and dangerous of the industry's crafts. After shooting troubles in the hot sun for most of the day, attaching cable insulation with an acetylene torch and rewiring connection boxes by hand, one splicer climbed down from his pole, caught his breath for a moment, and said with evident sarcasm, "Oh yeah, it's all automated now. None of that manual labor anymore." In fact, my guide was under medication for severe back pain from a fall he suffered some time ago. He only hoped to put in his time and enjoy his retirement in good health. Many of his co-workers had not enjoyed such good luck.

Rarely asked to share their views and experiences, these workers eagerly lead me down the organizational corridors that link them to their managers, helping me sketch the changing face of managerial power in the monopoly capitalist firm. Through such forays as this, through surveys of the industry's workforce, and historical analysis of its structure over time, I have addressed a set of questions that focus squarely on the nature of work and authority under modern capitalism. What social mechanisms enable management to harness workers' productive capacities, while maintaining workers' subordinate position within the firm? When technologies lay hold of craft and clerical work, how are the prevailing levels and forms of working knowledge affected? Have American workers come to view managerial authority as an unalterable fact of working life, as so many theorists have claimed? And precisely how has the present institutional pattern of authority evolved out of the ties that bound workers to their employers in prior decades?

Issues such as these have been much debated among industrial sociologists, but as yet little or no consensus has emerged.¹ Some theorists of work and authority advocate a de-skilling perspective toward work processes, which views the fate of skilled, autonomous work in largely tragic terms. In this view, companies invoke new and ever-more sophisticated technologies at least partly to reduce their dependence on their employees. The end result uproots workers' skills and deepens management control over virtually all aspects of the work process. Other theorists depart from this tragic view, arguing that information technologies impel work organizations down a far more flexible, "post-hierarchical" path. The notion here is that information technologies increasingly overturn the traditional ethos of obedience that accompanied industrial capitalism, substituting a new division of labor founded on responsibility, commitment, and social integration. Still other theorists disavow the prevailing tendency to emphasize the organization of workers' tasks and the technology of work, focusing instead on the broader social fabric of work relations that takes root within the modern firm. Put simply, this third perspective argues that ideology, not technology, provides the key to understanding the nature of labor control within the modern corporation. One goal of this book is to adjudicate between these rival perspectives on work and managerial power, to identify their respective virtues and limitations, and in so doing to make possible a fuller, more adequate understanding of the system of class relations that has unfolded at the point of production itself.

Previous efforts along these lines have moved in one of two directions. The first has involved the use of national data on changes in skill requirements in the overall economy, seeking to establish the nature of trends in the structure of work. Often, research in this mode has made use of aggregate data—for example, the *Dictionary of Occupational Titles (DOT)* compiled by the Department of Labor—to analyze changes in the complexity of work.² This type of research carries with it real advantages: it allows us to draw generalizations at the macrosocial level of analysis—where most of our theories are couched—and to do so with great precision. For this reason aggregate research has been especially influential in defining the course of the discussion. Yet less often acknowledged are the costs implied in this research strategy.

Reliance on formally derived measures of occupational complexity often blinds us to the *informal* processes at work that may underlie or even contradict data on occupational conditions. Although aggregate studies which use the *DOT* contain a rich set of measures that bear on occupational complexity, they are less generous in their treatment of other, equally critical dimensions of work—especially changing forms or degrees of control. For these reasons the use of aggregate data often introduces a yawning gap not only between theory and research, but also between the researcher and the concrete work settings he or she seeks to understand.³

A second research strategy has relied on varying types of case study designs. Some research in this vein has tried to maintain the quantitative rigor of aggregate research while using a more delimited and therefore more nuanced approach. Often researchers have designed inter-industry studies of the work organizations located within an area or region (Hull, Friedman, and Rogers 1982; Kalleberg and Leicht 1986). Other studies have constructed national samples of firms in a given industry (Kelley 1990). Still other case studies have adopted a qualitative approach, seeking to unearth the texture of work relations within particular firms, organizations, or occupations over time (for example, Kraft 1977; Cockburn 1983; Wilkinson 1983; Halle 1984; Noble 1984; Zuboff 1988, and many others). Although the latter studies can seldom make broad generalizations about workplace trends more broadly, their attention to the fine grain of workplace relations has equipped them to make a disproportionate contribution to sociological debate and analysis.⁴

One particularly useful research strategy has sought to combine the richness of the case study design with the generalizeability of aggregate research: studies which focus on a critical case or strategic research site.⁵ Particularly among researchers interested in the link between advanced technologies and skill requirements, it has been common practice to explore the nature of continuous-process industries—most notably petrochemical firms—which are assumed to provide a privileged view of the trajectory of workplace automation writ large.⁶ In retrospect, however, this fascination with continuous-process industries seems unfortunate. To begin with, it is by no means clear why continuous-process work

is inherently more 'advanced' than other branches of production. Do the tubes, pipes, and vats needed to cook fluids and gases necessarily reflect a more fully developed technology than is used in other production contexts? Moreover, the peculiarities involved in chemical work seem so great as to imperil the application of the findings to other manufacturing contexts, let alone to other sectors of the economy more broadly. Most important, case studies of chemical work tell us little about the more knowledge-intensive branches of the capitalist economy, which assume a growing importance apace with technological change and about which so much remains to be learned.

These considerations underlie the research developed in this book, a case study of the telecommunications industry. Long the privileged domain of AT&T, this branch of production has historically been in the vanguard of American management's efforts to forge systems of labor control.⁷ The industry's conditions of employment (its automated work process, provisions for upward mobility, and relatively high wages) epitomize those ingredients that scholars have stressed as making up the bureaucratic-capitalist firm. Moreover, the industry is broadly reflective of the burgeoning 'information' industries, which figure so prominently everywhere except in the research literature. Particularly in light of the infusion of competitive forces into this industry (a process that began well before the breakup), research on this terrain can tell us a great deal about the changing character of managerial power within the monopoly capitalist firm.

Ironically, the very features that make this industry revealing acted to impede the conduct of research. The study began at precisely the moment when the Modified Final Judgment broke the Bell system apart, imposing an unprecedented economic restructuring that rendered obsolete ordinary methods of coping with uncertainty. Both management and the industry's major union (CWA) struggled to gain leverage as the first round of post-divestiture negotiations approached. This fact, coupled with my prior association with the CWA, magnified the difficulties involved in doing jointly sponsored research, and ruled out the involvement of top management. Although it later proved possible to enlist the support of many middle-level managers, who provided access for ethnographic research, top management's distrust

of the project impeded the full application of qualitative methods to this research terrain.

At the same time, the trust and cooperation I enjoyed with union leaders opened doors that were at least as valuable as those that management had closed. With sponsorship from the District I staff, I gained the trust of union officials and stewards at fourteen local unions in both New Jersey and New York. With help from local union officers and stewards, I designed a cross-sectional survey that explored the links among new technologies, the organization of the labor process, and workers' attitudes toward both their jobs and their employers. Eventually, two such surveys were administered—the first a 'regional' survey including more than eight hundred workers and the second a more intensive study of 175 workers in a single local—bearing on the situations and experience of communications workers in all the industry's major occupations.

Sociologists of work have increasingly turned toward historical analysis in an effort to understand patterns of authority and resistance. Mindful of the limits of cross-sectional surveys alone, I was led to move in two further directions at once: (1) to conduct a 'micro-historical' analysis using retrospective interviews to piece together the unfolding of production relations within a single Bell operating company (New York Telephone), and (2) to develop a more broadly historical analysis of labor control systems at AT&T during the early part of this century. Working backward and at these two levels, then, the study has sought to understand the emergence and transformation of labor control systems within the Bell system during the twentieth century.

The book begins at the theoretical level. Chapter 2 critically reviews the current debate over managerial power and labor control within the advanced capitalist firm. My aim is to outline the three rival images of work mentioned above—theories of deskilling, upgrading (or enskilling), and managerial hegemony—extracting from them themes and empirical claims can be judged against the social relations that have actually unfolded in this branch of production.

The substantive analysis begins in Chapter 3, where I explore the mechanisms Bell management historically invoked in the effort to control its workers. As the chapter shows, scientific management techniques were abundantly present within AT&T's tele-

phone exchanges beginning as early as the middle 1890s. Yet the significance and the outcome of Taylorism as a means of labor control are far less abundantly clear. Put simply, Chapter 3 suggests that Taylorism by and large failed to arrest (indeed, actually promoted) the rise of labor struggle and organization of Bell employees. This corner of labor history is not well known: tales of syndicalist battles and sit-down strikes have attracted far more attention than the struggles of pedestrian workers laboring at switchboards, central offices, and telephone poles.⁸ Yet the course of labor struggle in this industry is revealing, not only because of the vibrant growth of trade unionism among women operators (who built the largest woman-controlled union in the history of the American workers' movement),⁹ but also because of the conspicuous silence of these same workers during the turbulent decade of the 1930s. Chapter three explains this trajectory by tracing the emergence and persistence of a formidable system of industrial paternalism throughout AT&T.

The historical roots of this system reach back to feminization of the Bell work force in the 1880s, which gradually led management to adopt a set of 'special responsibilities' toward its workers, beginning with the provision of dormitories for night workers in the 1890s, and generally infusing a familial character into the nation's telephone exchanges. These offices were in fact designed to replicate the workers' homes (or, at least, management's conception of them), with sitting parlors, dining rooms, and other such amenities. Once management adopted the AT&T Benefit Plan (an early version of welfare capitalism) and then a latticework of company unions, the elements of a powerful system of paternalistic authority were in place, allowing the company to stem the tide of workers' resistance for decades. The course of these developments lends support to the arguments of Michael Burawoy (especially Burawoy 1985), for the company's exercise of control over its workers emanated not from the labor process (Taylorism or machines) but from the wider political apparatuses of the firm.

By the end of World War II, however, the effectiveness of Bell paternalism had almost completely decayed. Exploring the forces that underlay the transformation of managerial paternalism brings into focus certain weaknesses implied in Burawoy's theory of production politics. Most important, his theory fails to note

the workings of the internal contradictions that can unfold within managerial regimes. For the collapse of Bell paternalism was not merely the product of wider political and economic forces imposed on production politics from without. In addition, there were important *endogenous* sources of change, as Bell paternalism itself provided workers with precisely those resources they needed to challenge managerial control. Paternalism manifested unanticipated consequences, then, as it evolved down paths that management could neither foresee nor control.

By World War II the rise of industrial unionism within the Bell system brought the era of paternalism to a close, forcing the company to devise new means of controlling labor even in the context of labor organization. What means of control emerged, and with what effects? To address this question, the analysis focuses on developments affecting workplace *technology* (explored in Chapter 4) and managerial *ideology* (the focus of Chapter 5).

During the immediate postwar years, skilled craftworkers made up an increasingly prominent occupational category within the industry's work force as the spread of machine-based switching systems required increasing numbers of skilled workers to maintain the new equipment. As Chapter 4 reveals, customary work arrangements left these workers considerable discretion in the conduct of their jobs, achieving a temporary pattern of mutual accommodation between the company and its craftworkers. As economic competition began to emerge (a process that began decades before the final divestiture), AT&T management was forced to restructure its internal operations. Beginning in the late 1960s and early 1970s, the company instituted a sweeping campaign of restructuring that uprooted informal, customary work relations and disrupted the temporary equilibrium that existed between capital and labor. Prominently featured in this process of change was a wide array of microelectronic systems—including "stored program" switching equipment, microprocessor-based systems that automated the work of testing and system diagnosis, and highly integrated database technologies—the overall effect of which brought the provision of telephone service ever closer to a continuous-process form of production, with control rooms monitoring the functioning of remote installations. The key questions addressed in Chapter 4 are whether this shift has enabled manage-

ment to uproot workers' skills and degrade their work situations, or instead opened up a path that leads beyond hierarchical structures and toward new, more flexible forms of work organization.

Put bluntly, the answer is that neither model adequately captures the transformation of the industry's work processes. To be sure, skilled manual work has often come under frontal attack, much as de-skilling theorists contend. This process has been especially pronounced among skilled manual workers engaged in diagnostic work (the Test Deskmen), where programmable machines have incorporated the knowledge that craftworkers had taken decades to amass. This instance conforms to the experience of machinists faced with Computerized Numerical Control (CNC) systems, as has been widely studied. Other craft jobs too have suffered. Yet my analysis suggests that a different, more subtle dynamic has occurred than the de-skilling paradigm predicts.

In important respects, new technologies have indeed pried loose craftworkers' control over the labor process, as new information technologies have displaced workers who occupied strategic locations within the labor process. Yet such changes have by no means issued in a simple or uniform process of de-skilling; nor have they resulted in the homogenization of workers' tasks. Even under conditions where managers have had both the motive and the opportunity to uproot craftworkers' skills, management has been unable to abolish the need for skilled crafts. Rather than simply eliminating workers' skills, new technologies have often tended to replenish them, redistributing skilled functions among new claimants within the firm. The overall result has been to reproduce or perpetuate skilled work as an occupational category, even as the nature and importance of skill has been transformed in certain far-reaching ways.

A different process has gripped routine office workers. As is especially clear in Bell departments devoted to maintenance or plant functions, clerical workers have traditionally occupied subordinate positions, laboring in support of skilled craftworkers. Clerks, a predominantly female group, have assisted craftworkers by fielding incoming reports of trouble, filing data on service histories, and retrieving data relevant to the work of installation and repair. Workers performing these relatively unskilled functions have found their jobs especially vulnerable to the de-skilling

process, as Bell firms have shifted toward larger and ever more tightly controlled office settings in which VDTs have served not only as data entry devices but also as powerful levers of control. The evidence suggests, then, that automation has not in fact promoted the homogenization of work, but has maintained (and perhaps even reinforced) the older dualism between craft and clerical employees. Viewed historically, this suggests that new technologies have been assimilated into the existing division of labor, reproducing the inequalities that predated the introduction of the new information systems.

Analysis of technological change, however, is only one element of the larger analysis of labor control. Before drawing any firm conclusions regarding contemporary authority relations in this branch of production, the analysis explores the degree to which wider organizational processes have established a pattern of *normative* or *ideological* controls, quite independent of the structure of workers' tasks. In varying ways, precisely this claim underlies the work of many recent theorists of workplace authority who have variously formulated what can be termed the "hegemony" thesis. This perspective, represented in the writings of Burawoy, Richard Edwards, Claus Offe, Andrew Friedman, and several others, insists that the politics of production under advanced capitalism increasingly resembles the politics of state democracy: mechanisms of consensus formation serve to integrate divergent classes into the system, inviting subordinate groups to take for granted the underlying "rules of the game." Whether due to the spread of an ideology of industrial citizenship or to informal mechanisms of adaptation to inequality, managerial hegemony induces workers to consent to the status quo and even to implicitly collude in their own exploitation. Chapter 5 explores the adequacy of this 'hegemonic' model in depicting the substance of worker consciousness and its susceptibility to managerial control.

Bell firms are an especially appropriate site on which to address this theme, for the industry has been host to many of the conditions on which hegemony theory rests. Workplace reform efforts have been well represented here, as the Quality of Work Life process has been encouraged by both management and the union. A system of internal labor markets—an institutionalized set of rules governing the distribution of workers into positions—

is also apparent here. Finally, the economic restructuring of the industry has posed an external threat to these workers' well-being, conforming to conditions that hegemony theorists believe should encourage workers to close ranks behind their employer. Has this occurred? Has the work organization generated a 'consensual' form of discourse that invites workers to identify more with the firm than with the members of their own social class?

The evidence presented in Chapter 5 casts serious doubt on the validity of hegemony theory as a portrayal of production politics, for management's ideological dominance over its workers seems far less effective than this model allows. Although one finds evidence of workers and occupational groups who *do* consent to managers' power over their labor or otherwise manifest managerial inclinations, the majority of these workers harbor an *oppositional* consciousness. They consider themselves members of the working class, they perceive the company in dichotomous terms, and they are not shy about walking the picket line to defend their hard-won gains.¹⁰ Moreover, few workers subscribe to ideological portrayals of new technology as merely the avatar of 'progress.' Although there are distinct variations in the character of workers' consciousness, these workers do not lack the ideological resources they need to press their needs to the fore. How then is labor control achieved?

As Chapter 6 concludes, a new managerial regime has begun to emerge, based partly on the growing power of digital technologies. At work here has been a process that has *severed the tie* between technical skill and control over the labor process. As information technologies have been applied to the most central, directive nodes of production, human labor has been repositioned, shifted to an increasingly auxiliary role within the labor process. Even workers whose tasks remain relatively complex find that they have purchase on a narrower proportion of the labor process than ever before. In short, an 'algorithmic' set of controls has begun to unfold that enables information technologies to regulate the labor process more fully than ever before (Appelbaum and Albin, 1989). Indeed, it becomes increasingly problematic to speak of the automated firm's operations as a "labor" process at all.

The implications of these developments for theories of work are manifold. First, they suggest that the existing dichotomy between the labor process (the organization of work methods)

and the political apparatuses of production (the authority relations through which management exerts control) has begun to collapse. As programmable machines acquire the ability to regulate the internal operations of the firm—to control the flow of work between different departments, to monitor the functioning of remote installations, to adjust the system's functioning when faults occur, and to assign tasks to human workers when the need arises—the technology of work has absorbed the functions of control that had previously been external to it.

Further, the study begins to point toward the need for much greater care in the interpretation of workplace change with respect to the separate dimensions of work content. Thus, theorists have often used the terms 'skill' and 'control' as if they were interchangeable or as if the former dimension were invariably linked to the latter. That linkage may have been true in older manufacturing industries where the mastery of one's tools conferred power of the labor process. But in contexts where the object of production is information and in which programmable machines occupy increasingly central positions with the firm's operations, the performance of complex, specialized operations no longer gives workers purchase over production. The specter that haunts labor, then, is not an electronic version of the familiar factory system, but rather *the consignment of human labor to ever more peripheral locations within a digitally regulated production process whose functioning has grown largely independent of the worker's skills.*

This nascent system of algorithmic controls is not self-sufficient. Vital to its growth and persistence are decidedly *non-technological* structures that theories of labor control seldom acknowledge. One is a set of political and legal influences that places pivotal groups of technical employees beyond the pale of trade unionism. Second and even more important is a system of collective bargaining that has tended to institutionalize managerial prerogatives. Caught within an institutional web of legal obligations, the major union in this industry has implicitly sanctioned the rise of a new regime, as if the restoration of managerial power might not return to take its revenge. Thus, if the trade union leadership now confronts a more subtle and powerful form of labor regulation than this century has known, it faces an opponent it has implicitly brought into being.

Much has been written about the emergence of flexible and egalitarian forms of work organization in high-tech industries. The bulk of this literature has been directed toward managerial officials in the hope that they might lead their firms beyond the rigid hierarchies of industrial capitalism. Yet this study suggests that top management has little inherent interest in taking such a step. Information technologies appear to provide management with precisely those controls they seek in order to ensure the achievement of their objectives. Indeed, the algorithmic controls that have emerged seem to dwarf the old regime of paternalism both in power and sophistication. The sources of change in this nascent regime, then, must come from below—from workers and lower-level union leaders. The clock is ticking, both for communications workers and their counterparts in other information industries.