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Karl Marx and the Satanic Mills: Factory Politics under Early Capitalism in England, the United States, and Russia¹

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This paper sets out from a theoretical paradox in Marx's analysis of capitalism: that the working class is the victim of the logic of capitalism and at the same time is supposed to rise up against that logic. Traditional resolutions of this paradox are inadequate; the resolution proposed here involves the distinction within the sphere of production between the labor process and the factory regime. By a series of comparisons of textile industries in 19th-century England, United States, and Russia, the article highlights four factors that shape factory regimes: the labor process, market forces, the reproduction of labor power, and the state. It shows how an examination of factory regimes can account for the absorption of working-class radicalism in England after 1850 and the deepening of working-class radicalism in Russia after 1905, culminating in the revolutionary movements of 1917. Finally, it presents the implications for Marxism of this distinction between the strictly economic elements of production and its political and ideological institutions.

This paper seeks to resolve a historical anomaly by unraveling a theoretical paradox. The anomaly is the commonplace observation that in England, where Marx anticipated the outbreak of the first socialist revolution, the working class proved to be reformist in its political impulses, whereas in Russia, whose backwardness was supposed to delay the transcendence of capitalism, the working class proved to be the most revolutionary.² Although there have been many attempts to explain the anom-

¹ This paper would have been very different were it not for detailed criticisms from students in the Social Organization Colloquium at the University of Wisconsin—Madison, and from Ron Aminzade, Vicki Bonnell, Isaac Cohen, Carol Hatch, Jeff Haydu, Erik Wright, Reggie Zelnik, and two referees. I am very grateful to all of them. Requests for reprints should be sent to Michael Burawoy, Department of Sociology, University of California, Berkeley, California 94720.

² Three qualifications, one theoretical and two historical, are in order. First, I recognize that Marx, particularly in his later years, speculated on alternative routes to socialism. However, the only one he theorized, even if it was a flawed theorization, rested on the growing contradiction between private ownership of the means of production and socialized forces of production, which meant that the more mature capi-

ally within a Marxist framework, they have generally suffered from one or the other of the following shortcomings. First, they have dwelt on the peculiarities of either England or Russia instead of providing a single framework which would explain both working-class reformism in the one and the spread of revolutionary momentum in the other. Second, they have often lost sight of the centrality of the process of production in shaping the character of the working class. In this paper I try to address both shortcomings by linking the historical anomaly to a theoretical paradox: that for Marx, capitalist production is both an arena of undisputed domination of capital over labor and at the same time the spring of class struggle.

In *The Communist Manifesto* Marx and Engels write:

The advance of industry, whose involuntary promoter is the bourgeoisie, replaces the isolation of laborers due to competition, by their revolutionary combination due to association. [Tucker 1972, p. 345]

This organization of the proletarians into a class and consequently a political party, is continually being upset by the competition between workers themselves. But it ever rises up again, stronger, firmer and mightier. . . . [Tucker 1972, p. 343].

And in *Capital* Marx writes:

Along with the constant decrease in the number of capitalist magnates, who usurp and monopolise all the advantages of the process of transformation, the mass of misery, oppression, slavery, degradation and exploitation grows; but with this there also grows the revolt of the working class, a class constantly increasing in numbers, and trained, united and organised by the very mechanism of the capitalist process of production. [Marx 1976, p. 929]

But how does one get from one to the other—from competition, isolation, misery, oppression, slavery, and exploitation to combination, association, and struggle? This question cannot be passed over with a dialectical sleight of hand or dismissed as a Hegelian contamination.

There are four frequently encountered resolutions of this paradox. The first imputes to the working class a historic mission to overthrow capi-

talism became the more advanced was its contradiction. Cohen (1978) has recently clarified the premises and arguments of this position. Second, I do not want to suggest that Russian workers made the revolution or were even its leading force. I am more interested in the fact that they became revolutionary in their deeds and their demands. Third, the contrast should not be overstated: English workers had their revolutionary junctures before 1850 and among metalworkers, e.g., after World War I. Russian workers, on the other hand, are distinguished for their passivity before 1895 and after 1917. But the problem remains: how is it that English radicalism of the period before 1850 was subsequently absorbed, whereas the radicalism of Russian workers in 1905 deepened into a revolutionary movement in 1917? This third qualification makes nonsense of any simple essentialist or cultural explanation for the different trajectories of the two labor movements.

talism, based on the degradation it experiences and the universal interests it carries. Here class struggle is ubiquitous, a primordial given and the prime mover of history. Whereas this resolution pushes aside the reality of domination and fragmentation as transient and superficial phenomena, a second resolution makes these factors central. Here the working class must wait for the inexorable laws of capitalism to precipitate the final catastrophe, at which point the transition to socialism is automatic. This is history without a subject. Neither of these is a serious solution, since both deny the paradox by suppressing one of its terms—in the first case the demobilizing effect of capitalist production and in the second the appearance of the working class as a historical actor.

More sophisticated resolutions argue that neither is the working class inherently revolutionary nor is capitalism necessarily doomed by some immanent logic. Hence an external force must bring enlightenment to the working class. In its most orthodox version, this force is the unified and unifying vanguard party. Here the working class is prevented from becoming conscious of its revolutionary goal by the corrosive effects of the dominant ideology. The party intervenes to demystify the dominant ideology, holding up a mirror to the working class so that it recognizes itself as a heroic actor. This presumes too much about the readiness of the working class to change its self-conception. Working-class consciousness does not drift with the prevailing ideological winds but is firmly anchored in the process of production. This solution is also flawed as an interpretation of history. According to many Marxist and non-Marxist historians, the Russian Revolution is the locus classicus of such an external agency. Recent social history sheds much doubt on this interpretation: the Bolshevik Party in 1917 was not the monolithic entity it was to become; instead, its success lay in its disunity, heterogeneity, and responsiveness to the indigenous impulses, militancy, and grievances of a turbulent working class (Rabinowitch 1976; Service 1979; Suny 1983).

Social historians have therefore turned to the sources of that turbulence in the totality of working-class experiences within and outside production. They offer a fourth bridge from domination to resistance, which distinguishes the capitalist mode of production from the capitalist system (Lazonick 1978), the logic of capital from capitalism (Thompson 1978, pp. 247–62). Beyond the arena of production are institutions such as the family, the church, the neighborhood, the pub, the friendly society, and the political club which provide the organizational resources for turning economic subordination into political struggles. Cultural, political, and communal legacies from the preindustrial era provide the clay out of which workers mold themselves into a class (Thompson 1968; Sewell 1980; Aminzade 1981; Dawley 1976; Gutman 1977).

As Calhoun (1982, esp. chap. 4) has argued with respect to Thompson's

study (and as could be argued with respect to the others), the emergence of community and tradition as bastions of resistance was closely allied to the character of production, namely, threats to its existence and the extent of control exercised by the direct producer. Bonnell (1984) has argued that where such craft or communal traditions are weak, as in Russia, the workshop itself becomes the citadel of resistance. In each case we are thrown back to the workplace as a critical determinant of working-class struggle. This is, of course, explicitly recognized in many studies of factory production. Shorter and Tilly (1974) and Hanagan (1980) link the character of strikes and political mobilization in France to work organization and its transformation; Moore (1978) discovers the roots of rebellion in the violation of the contractual order between managers and workers; Foster (1974) ties the rise and fall of working-class radicalism in Oldham to the character of crises facing the cotton industry as well as changes in the productive process; and Montgomery (1979) unveils the workplace as a fund of resources with which American workers resisted managerial domination.

While all these works recognize that production has ideological and political as well as economic consequences, this recognition is too often buried in the search for the totality of working-class experiences. With some notable exceptions, social historians have sought to expand rather than contract the arenas shaping working-class struggles. In this paper I theorize what I believe underlies many of their studies—namely, the centrality of production—by distinguishing the *labor process*, conceived as the coordinated set of activities and relations involved in the transformation of raw materials into useful products, from the *political apparatuses of production* or *factory regime*, understood as the institutions that regulate and shape struggles in the workplace—struggles which I call the “politics of production.” Marx himself was not unaware of the distinction but failed, first, to thematize its significance, namely, the way factory regimes shape interests and capacities, thereby linking domination to struggle. Second, he failed to thematize the possibility that changes in the factory regime may occur independent of changes in the labor process. By returning to the scene of Marx’s own analysis—the Lancashire cotton industry in the 19th century—we shall see that Marx’s prototypical form of factory regime, market despotism, was not only rare but inimical to the development of working-class struggles. Instead we discover different types of production apparatuses within the textile industry of early capitalism: the company state and patriarchal and paternalistic regimes in Lancashire, paternalism and market despotism in New England, and the company state in Russia.

Accordingly, in this paper I have set myself two tasks. The first is to examine the conditions of existence of different types of factory regime,

focusing on four main factors: the labor process, market competition among firms, the reproduction of labor power, and state intervention. The second and more difficult task is to isolate the effect of factory regimes on struggles. Although I obviously do not exclude other factors, I argue that variations in factory regime are *sufficient* to explain both working-class reformism in England and a revolutionary movement in Russia. Other factors enter the analysis only as determinants of factory regimes. This is not to say that the only effects of these other factors on struggles are indirect, mediated by production regimes, but, rather, that an account of their direct effects is not *necessary* to understand the divergent trajectories of the two labor movements.

MARX'S PROTOTYPE: MARKET DESPOTISM

Marx and Engels had a definite notion of the emerging form of social regulation in modern industry. Marx describes the factory regime in the most advanced industry of his time, the textile industry, as follows:

In the factory code, the capitalist formulates his autocratic power over his workers like a private legislator, and purely as an emanation of his own will, unaccompanied by either that division of responsibility otherwise so much approved of by the bourgeoisie, or the still more approved representative system. This code is merely the capitalist caricature of the social regulation of the labour process which becomes necessary on a large scale and in the employment in common of instruments of labour, and especially of machinery. The overseer's book of penalties replaces the slave driver's lash. All punishments naturally resolve themselves into fines and deductions from wages, and the law-giving talent of the factory Lycurgus so arranges matters that a violation of his laws is, if possible, more profitable to him than the keeping of them. [Marx 1976, pp. 549–50]

This despotic regime of factory politics is considered the only one compatible with the exigencies of capitalist development. It is the counterpart within production of the coercive pressures of the market outside production which compel capitalists, on pain of extinction, to compete with one another through the introduction of new technology and intensification of work. Anarchy in the market leads to despotism in production: the market is constitutive of the apparatuses of production, and we call this regime “market despotism.”

Competition among firms is only the first of four conditions of existence of market despotism. The second factor is the real subordination of workers to capital, the separation of conception from execution. Marx recognized different forms of subordination in his delineation of three stages in the development of industrial production (Marx 1976, p. 645). In the first, handicraft production, workers control and own the instruments of production but are subject to exploitation by merchants and to competition

from ever more productive factories. In the second stage, the formal subsumption of labor to capital, workers are brought together under a single roof, retain control over the labor process, but no longer own the means of production, which become the property of capital. This phase of wage labor gives way to the real subsumption of labor when workers lose control of the labor process. The worker is transformed from a subjective to an objective element of production.

“The lifelong speciality of handling the same tool now becomes the lifelong speciality of serving the same machine. Machinery is misused in order to transform the worker from his very childhood, into a part of a specialized machine. In this way, not only are the expenses necessary for his reproduction considerably lessened, but at the same time his helpless dependence upon the factory as a whole, and therefore upon the capitalist, is rendered complete” (Marx 1976, p. 547). Here is the third condition of market despotism: the dependence of the worker on the employer, on the sale of labor power for a wage. This presupposes that workers are completely expropriated from the means of their subsistence. Dependence on a particular capitalist is consolidated by a reservoir of surplus labor. Marx examines this process of “primitive accumulation” in some detail for England but too easily presumes that complete expropriation would become the norm for all capitalist societies. Finally, Marx also assumed—and this is the fourth condition of market despotism—that the state would preserve only the *external* conditions of production, conditions for the autonomous working of market forces. In particular, the state would not directly regulate either relations among capitalists or the process of production and its apparatuses. Marx took these third and fourth conditions for granted. On examination, however, not only are they problematic, but their variation is crucial to the determination of factory regimes.

As Marx recognized, market despotism effectively undermined working-class resistance to managerial domination: “The organization of the capitalist process of production, once it is fully developed, breaks down all resistance. The constant generation of a relative surplus population keeps the law of supply and demand of labour, and therefore wages, within narrow limits which correspond to capital’s valorization requirements. The silent compulsion of economic relations sets the seal on the domination of the capitalist over the worker” (Marx 1976, p. 899). How then can we explain the militant struggles of cotton operatives, particularly during the first half of the 19th century when textiles were the most advanced industry? The answer is simple: we find other factory regimes more conducive than market despotism to the development of struggles.

The four conditions of market despotism are rarely realized simultaneously. By treating them as four variables we can illuminate their inde-

pendent effects on the form of factory regime via a succession of comparisons. The first comparison, that of throstle spinning and mule spinning in Lancashire, underlines the importance of the labor process for the factory regime. Real subsumption of labor in the former is associated with the company state, whereas formal subsumption in the latter is associated with patriarchal despotism. The second comparison, that of the power-driven mule and the self-acting mule, shows the importance of both the labor process and competition among firms for bringing about the transition from patriarchal to paternalistic regimes. The third comparison, between paternalism and market despotism in the New England mills, provides evidence of the importance of separation from the means of subsistence, whereas the fourth comparative study, dealing with Russia, adds the factor of state intervention to the model. Our independent variables can be arranged in a causal hierarchy (see fig. 1) so that the first two (market forces and labor process) operate within limits defined by the second two (separation from the means of subsistence and state intervention). The model is obviously crude. It cannot explain all the variations in regimes, but it does highlight the critical factors determining the breakdown and transformation of factory politics.

LANCASHIRE: FROM THE COMPANY STATE TO PATRIARCHY

At the heart of the Industrial Revolution lay the transformation of cotton textile manufacturing. After 1760 the flying shuttle was introduced into weaving, stimulating the demand for yarn. Until the middle of the 18th century spinning had been a slow and laborious process using spindle and distaff and sometimes the spinning wheel. The adoption of the jenny in the 1770s permitted a single operator to spin on a number of spindles simultaneously. These technological innovations did not transform the division of labor in domestic production. The jenny could be used in the home, although, as the number of spindles increased, it had to be harnessed to water power and a few jenny factories emerged.

Although the jenny multiplied the power of human hands, “the grip of the human hand and the drawing of the human arm were still essential” (Chapman 1904, p. 53). Arkwright’s water frame, also known as the throstle, worked on an entirely new principle. Instead of the human hand, two sets of rollers would draw out the cotton roving, which was then continuously and simultaneously twisted and wound on a bobbin. It was the first automatic spinning machine, but it required more than human power to drive it and was often built in the rural areas with access to streams. “The waterframe was a substitute for human skill. . . . [It], therefore, summoned into the cotton industry a lower class of labour . . . but it cannot be said to have displaced skilled cotton spinners in any

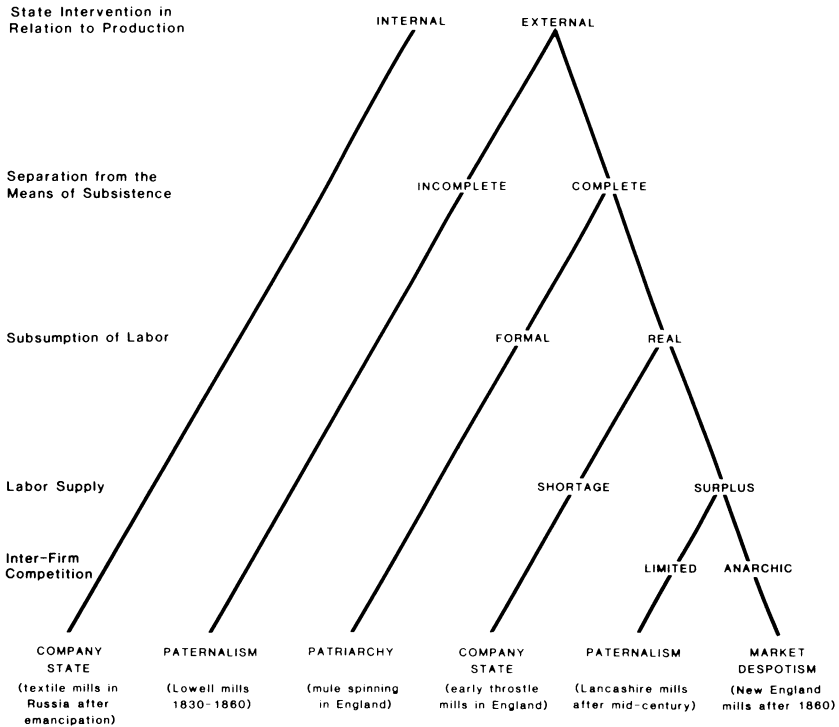


FIG. 1.—Hierarchy of determinants of factory regimes in the early cotton industries.

appreciable degree, since it was confined chiefly to the production of warps which had previously been made of linen or wool” (Chapman 1904, pp. 53–54). Operatives were usually women or children: “Masters often hired the head of family, however, for road-making, bridge-building, or plant construction while employing the wife and children in the mill” (Smelser 1959, p. 185). It was to these early mills that pauper apprentices were recruited, particularly around the turn of the century. They were less likely to be used where family labor was available, although as far as employers were concerned they did not present the problems involved in the employment of adult males. In any event the importance of the pauper apprentices has been exaggerated; they never formed more than a third of the labor force at any of the mills, and they were phased out in the early years of the 19th century (Morris 1960, pp. 314–15).

Real subsumption of labor in the factory, where managers controlled the speed of machinery and operatives were machine tenders, laid the

basis for domination of the community by the millowner. Through their control of housing, provisions, company stores, education, and religion, masters were able to consolidate their rule in all spheres of life. Smelser distinguishes two types of early water-frame factory: “those run by brutal, heartless capitalists who flogged their employees, especially the apprentices; and those run as ‘model’ communities by humanitarian masters” (Smelser 1959, p. 105). The factory village became a state within a state, or what I call a “company state,” with its own coercive apparatuses. “If we add to this economic and political power of the employer his power over education, housing and the like, it will be clear why management of a factory or mine might come to mean government of a whole community” (Pollard 1965, p. 206). The company state went beyond market despotism to intervene coercively in the reproduction of labor power, binding community to factory through nonmarket as well as market ties.

In England the water frame soon gave way to mule spinning, which was more efficient at the same time as it provided the finer thread for weft (Smelser 1959, p. 121). The mule combined the principles of the jenny and the water frame—that is, it combined roller drafting with the simultaneous stretching, twisting, and winding mechanisms which required the application of considerable skill and effort by the operator—but the early mules could be used in the home with human power. When the mule was brought into the factory and harnessed to nonhuman power, factory owners adapted the domestic organization of production to their own needs. They recruited adult male spinners who were paid by the piece and who in turn recruited their own helpers—women and children, often from their own family. Under such an arrangement of inside contracting, the master handed over responsibility for supervision and work organization to the spinner. Thus, there were relatively few overseers in the mule factories compared with the water-frame factories.³ The system of payment was also different. In the mule factories, helpers (piecers and scavengers) were paid a fixed wage, whereas the contractor (the spinner) was paid by the piece; the harder the latter drove the former, the greater were his dividends. Moreover, pressure from employers in the form of rate cutting could be passed on to helpers as the intensification of effort. In the throstle factory, because production was so completely controlled

³ Cohen (1984) has culled the following figures, referring to 1833, from parliamentary papers. Males over 18 constituted 35% of employees in mule spinning and 10% in throstle spinning. Of working children under eighteen, 88% were employed by operatives in mule spinning, whereas only 1% were employed in throstle spinning. The ratio of overseers to workers was 1 to 84 in mule spinning but as high as 1 to 14 in throstle spinning.

by management, operatives were paid an hourly rather than a piece wage.⁴

Whereas the real subsumption of labor in the throstle factory laid the basis of the company state, the formal subsumption of labor in the mule factory established the conditions for a patriarchal regime. Here production apparatuses were based on, or imitative of, the domination of the father over other members of the family. More specifically, the patriarchal regime involved a collaboration between subcontractor and employer, so that the former offered and organized the labor of the family or protofamily in exchange for wages and support of the autonomous domination of the patriarch over the women and children who assisted him. It is as if capital said to the patriarch, "You will keep your people within the rules conforming to our requirements, in return for which you can use them as you see fit, and if they go against your injunctions, we will furnish you with support necessary to bring them back to order" (Donzelot 1979, p. 50).

From the point of view of the cotton masters, patriarchal apparatuses of production had the advantage of containing struggles between the subcontractor and his helpers by relying on common family bonds and by holding out to male helpers the possibility of someday becoming spinners. At the same time there is no evidence to suggest that concern for his or others' children inhibited the spinner from sweating his piecers and scavengers (Lazonick 1979, pp. 236, 247, 252).⁵ Moreover, so long as this

⁴ The differences between the throstle and the mule parallel those between worsted and woolen production in the West Riding (Hudson 1981). Early worsted production was organized through a system of putting out. Domestic workers had access to only small and often infertile plots of land and so constituted for all intents and purposes a proletarianized labor force at the mercy of merchants. Here the early mills were run and financed by merchants, and a sizable component of the labor force was made up of women and children with no connection to domestic production. In the woolen industry, by contrast, artisans themselves controlled production. They had much greater independence not only because they produced a complete product but also because they had access to considerable means of subsistence. Here the early mills were run by small manufacturers who had often been domestic workers themselves. The labor force was also dominated by such proto-industrial workers. As in throstle spinning, in worsted production there was a break between domestic and factory production, whereas in mule spinning and woolen production there was continuity. Although Hudson does not tell us, one would expect corresponding differences in the political apparatuses of production.

⁵ Marx had a great deal to say about child labor but little to say about the direct sweating of children and women by adult men. Instead he concentrated on the effects of displacement of men by women and children: "Machinery, by this excessive addition of women and children to the working personnel, at last breaks the resistance which male workers had continued to oppose to the despotism of capital throughout the period of manufacture" (1976, p. 526). Patriarchy in production is destroyed and all that the father can do is sell his wife and children. "He has become a slave dealer"

regime of production politics did not inhibit changes in the labor process, it was also in the interests of factory managers wishing to contract out the risk and responsibility for direct control over work. In England, at least, entrepreneurs in the beginning did not have the inclination and later did not have the resources (in cotton spinning) to impose a system of market despotism (Lazonick 1979; Pollard 1965, pp. 38–47; Cohen, in press).⁶

There is some consensus that during the period 1790–1820, cotton spinning and other trades frequently relied on the family for recruitment, division of labor, and supervision. Most of the early trade union regulations among spinners restricted the recruitment of assistants to a narrowly defined set of kinship relations (Smelser 1959, chap. 9; Anderson 1971, chap. 9; Edwards and Lloyd-Jones 1973). But after 1820, technological changes—in particular, the rapid expansion of the number of spindles—increased the ratio of piecers to spinners, tending to break up the family as the organizing unit of production. According to Smelser, with partial confirmation from Thompson (1968, pp. 222, 231, 373) and Stedman-Jones (1975, p. 63), this disruption of the family was a major impulse behind the struggles of the factory operatives in the 1830s.⁷

(Marx 1976, p. 526). Moreover, the destruction of patriarchy lays the basis for a “higher form” of the family: “The capitalist mode of exploitation, by sweeping away the economic foundation which corresponded to parental power, made the use of parental power into its misuse. However terrible and disgusting the dissolution of the old family ties within the capitalist system may appear, large-scale industry, by assigning an important part in socially organized processes of production, outside the sphere of the domestic economy, to women, young persons and children of both sexes, does nevertheless create a new economic foundation for a higher form of family life and of relations between the sexes” (Marx 1976, pp. 620–21). Marx did not consider the possibility that capitalism could mobilize patriarchy in its own interest.

⁶ One referee suggested that I look at the differences between small and large shops in cotton spinning. There is substantial evidence that large manufacturers supported state-enforced factory legislation to undercut competition from smaller sweatshops, but I have not been able to discover much reliable information on corresponding variations in factory regime, or the effect of such differences on the participation of workers in the factory movement. This is a topic for further research.

⁷ Because Smelser’s analysis has been the focus of much controversy and because it intersects with the arguments of this paper, a brief consideration of his critics is necessary. Building on an earlier essay by Edwards and Lloyd-Jones (1973), Anderson (1976) offers the most detailed treatment. Anderson’s claims are as follows. First, the changes from the family-based farmer-weaver system to family-based employment in the mills (absence of parents, father no longer wholly superordinate, father-son relationship shortened), looked at from the point of view of the spinner, were much greater than the changes of the 1820s and 1830s highlighted by Smelser. Second, spinners were in fact not usually drawn from the family-based farmer-weaver system but were more likely to be former agricultural laborers and farm servants. Here the transition to the factory would have reunited the family, i.e., led to “de-differentiation” rather than “differentiation.” Accordingly, subsequent differentiation, to the extent that it occurred, would have been a return to the status quo ante. Third, again following on the

Major strikes, part of whose aim was to defend the monopoly of the male spinner against displacement by women, broke out in 1818, 1824, and 1829 (Smelser 1959, p. 252; Turner 1962, p. 142). John Doherty, leader of the Manchester spinners and architect of the Grand General Union and the National Association for the Protection of Labour, condemned the employment of women as spinners:

In the first number of the *Journal*, on 6 March [1830], a letter was printed from “a poor man, a spinner with a wife and five children,” who had lost his employment at 25 to 35s per week. Doherty commented that practice was harmful both to females, who must perform fatiguing labour in unwholesome conditions which made even male spinners old men by forty, and also to the workmen who were thereby supplanted. Thus, their natural roles were reversed, through the avarice of greedy employers, and “the miserable father has to take the place of the mother,” looking after the children at home instead of providing for them at work. [Kirby and Musson 1975, p. 109]

The defense of patriarchy—“natural roles”—is conducted as the defense of a family wage, the preservation of morals, and the protection of women. What is good for patriarchy is good for all, and indeed there are definite material interests which may bind women to patriarchy (Hum-

work of Edwards and Lloyd-Jones, Anderson argues that even at the height of family-based employment it is unlikely that more than 30% of piecers were coresident kin of their spinners, so that any trend away from family employment over the period 1825–35 cannot have been as crucial as Smelser claims. Fourth, even if such a differentiation of the family was brought about by technological changes, it is not clear that this would lead *spinners* to struggle for reform since their children would still be under their supervision, and thus their families would not be threatened with differentiation. Finally, Anderson claims that the struggles of the 1830s can be explained in terms of the attempt to maintain family incomes in the face of declining wages. Spinners wanted to employ their children longer hours so as to maximize their earnings rather than to defend themselves against structural changes of the family. Kirby and Musson (1975, pp. 147–48) also claim that spinners' strikes in this period are better understood as resistance to price cutting rather than to the differentiation of the family. These are important criticisms underlining the fatal flaw in Smelser's analysis, his attempt to develop a *suprahistorical* model: structural differentiation leads to protest which is ineffectual. In his concern for generality he fails (or, better, “refuses”) to specify the meaning of “differentiation” and the particular interests at stake in the family. His model is so general and therefore so vague that it can always be shown to be both “true” and “false.” However, Anderson's criticisms could be met if Smelser were to delineate the significance of the family as a site of male domination (Hartmann 1976) with a redistributive economic function (Humphries 1977). Of these two interests, male domination is the more fundamental, but its reproduction is dependent on certain material concessions to other members. Thus, Anderson is correct to point to the importance of maintaining the family income but only as a means to patriarchy. We see that the transition to the factory under either of Anderson's models did not threaten patriarchy, but increasing the number of piecers per spinner meant that children would begin to earn more money than their fathers, and *that* was a threat to patriarchy.

phries 1977). Just as the spinners were successful in maintaining their monopoly against the encroachment of women, they were also able to restrict the work of piecers to avoid being usurped during turnouts.

The patriarchal regime not only directly shaped production politics, that is, struggles confined to the sphere of production. It also stamped itself on the wider struggles in the realm of the state. The factory movement—the struggles for a shorter working day—showed how class interests came to be shaped by production politics. Although the 10-hours movement was presented as a drive for the protection of women and children, such protection was the most effective way of reducing the hours of men under a patriarchal regime. In a period of *laissez-faire*, men were held to be free and responsible agents who had no need of legislative protection, whereas women and children were dependents and therefore had such a need. The Factory Act of 1833 prohibited the work of children under the age of nine and restricted the hours of work for those between nine and 13 to eight, plus two hours of education. The Short Time Committees of the operatives regarded the 1833 act as a major defeat, since children could now be worked in relays so that the hours of spinners remained the same or became even longer. Spinners and employers connived in the violation of the 1833 act, continuing to work children longer hours and falsifying their ages. In other words, when the male spinners were not successful in reducing their own hours, they did not take advantage of the legislation to reduce the hours of their children. Indeed, in 1835 operatives began campaigning for a 12-hour day, which would have *increased* the working hours of children and young adults, in order to place an upper limit on their own hours (Smelser 1959, chap. 10; Driver 1946).⁸ What was at stake in these struggles for the equalization of hours

⁸ William Reddy's account (1975) of the French *linen* textile town of Armentières around the turn of the century also underlines the importance of the family as an integral unit of production. There it was the power-loom *weavers* who defended the patriarchal regime when technological changes threatened to *reduce* the number of apprentices. Through repeated strikes between 1899 and 1903, culminating in a general strike, the weavers managed to maintain the number of apprentices so that they could continue to hire members of their own families to assist them. Strikes by weavers effectively mobilized the community but strikes by *spinners* had little support and petered out soon after they began. The explanation revolves around ties connecting community and work. In weaving, more than one member of the family was usually employed so that technical changes threatened the family wage, whereas spinning was regarded as subsidiary employment and therefore less central to the stability of the family. Reddy further notes that in the French *cotton* industry power looms were easier to run and female labor was employed from the beginning, just as it later displaced men in spinning. As I shall have cause to point out again, the labor process by no means uniquely determines the form of production apparatuses, but the latter are crucial in shaping class struggles. See Perrot (1979) for a general sketch and periodization of factory regimes, which she calls forms of industrial discipline, in France, analyzed as a response to rather than a determinant of struggles.

of men, women, and children was the patriarch's control over production—more specifically, the protection of patriarchal apparatuses of production.

We therefore see, first, how operatives sought to defend rather than transform the existing patriarchal factory regime and, second, how that defense was carried into the wider political arena. This relatively unmediated relationship between production politics and state politics was facilitated by the rudimentary civil society, in particular, the underdeveloped party system which excluded direct representation for the working classes.

LANCASHIRE: FROM PATRIARCHY TO PATERNALISM

In order to undercut the control exercised by spinners through the patriarchal regime, employers sought to perfect a fully automatic mule (Catling 1970, p. 63). In 1832 Roberts overcame a number of technical problems to produce the first self-actor. Although some employers attempted to introduce direct control through the "multipair" system, in which an overlooker managed six to eight pairs of mules tended by piecers, their attempts were unsuccessful (Lazonick 1979, p. 237). Spinners or, as they came to be known, minders of the self-acting mules, did not struggle so much against the new machinery, which brought in its train deskilling and lower wages, as against any attempt to undermine the system of inside contracting whereby they controlled the recruitment, payment, and direction of their piecers.⁹

How was it that in England the system of inside contracting did not give way to control, to market despotism, as it did in other countries? During the 1830s and 1840s, when the self-actor was first introduced, the minder-piecer system was left intact by virtue of the weakness of capital, divided by competition on the one side and the strength of the spinner's organization on the other (Lazonick 1979, p. 245; Cohen, in press). It was also in the interest of management to maintain a patriarchal regime in order to minimize risks and maximize supervisory discipline, particularly as the self-actor was far from a perfected machine and was introduced only gradually. In 1842 minders and spinners consolidated themselves into the Association of Operative Spinners, Twiners and Self-acting Minders. Although it lasted for only a few years, this association led the way to subsequent powerful unionism and the successful defense of the

⁹ Some of the most significant struggles toward the end of the 19th century would be over the system of inside contracting rather than deskilling per se (Littler 1982; Clawson 1980). The debate between Hobsbawm and Pelling concerning the existence of a labor aristocracy in England revolves around the distinction between production apparatuses (stressed by Hobsbawm) and skill (stressed by Pelling).

privileged status of spinners and minders through the restriction of the supply of labor (Lazonick 1979, p. 246). The consolidation of wage lists, following the bitter confrontation during the Preston strike of 1853, in most of the cotton towns of Lancashire laid the foundation of a relatively stable class compromise, distinguishing this new unionism from the earlier radical movements, which had sought more extensive direct control over production.¹⁰ This closed unionism of the spinners and minders was very different from the open unionism that had spread earlier among the power-loom weavers—a unionism which had fought for amelioration not on exclusivist but on inclusivist principles through collective bargaining, strikes, and legislation. It was the entrenchment of restrictive closed unionism that managed to stifle the growth of open unionism until it burst forth in the 1890s (Turner 1962, pp. 139–232).

The industrial unionism that emerged in the mill towns of Lancashire after the mid-century, dominated by the sectionalism of the spinners and minders, was part and parcel of a new paternalistic production politics. “A conciliatory attitude, professing the identification of the interests of employer and operative, was the mark of all cotton trade unionism in these years” (Joyce 1980, p. 65). The bedrock of the new production politics, according to Joyce, was the completion of the real subordination of labor to capital in virtually all the major processes of the cotton industry. The elevation of the minders of the self-acting mule to “craft” status was not based on technical skills, and the retention of the system of inside contracting should not obscure the degree to which they had become like the rest of the factory labor force, having relinquished control over production if not over their piecers and their recruitment. Cohen (1983, p. 25) offers a complementary perspective in which the minder’s real subordination in the labor process was compensated for by a shift in his primary responsibility from that of an operative to that of a supervisor. This elevation to a position of authority contributed to the minders’ conciliatory attitude toward employers.

Centralization and concentration of the Lancashire cotton industry produced a number of large employers who had weathered the storms of earlier competition and crises (Schulze-Gaevernitz 1895, pp. 65–85). Not only had employers gained some control over anarchic markets, but also the prosperity of the third quarter of the 19th century permitted certain guarantees of material well-being for the operatives. In many cotton towns the masters had been established for many years and now became a symbol of their community. Their authority and influence permeated not

¹⁰ There had been numerous struggles over wage lists pre-dating the factory system, but wage lists in that era never achieved the widespread legitimacy, regional applicability, and machinery for enforcement that they did in the third quarter of the 19th century.

only public life but also the day-to-day existence of their hands beyond as well as within the factory. Although factory owners rarely controlled more than a minority of operative housing, they exercised their influence by constructing a communal leisure life around the factory through the erection of swimming baths, day schools, Sunday schools, canteens, gymnasiums, libraries, and, above all, churches. There were local sports events, trips to the countryside, and workers' dinners at the master's residence. There were public ceremonies and holidays to mark marriage, birth, and death in the master's family as well as to celebrate his political victories (Joyce 1980, pp. 90–157). In this way employees came to identify with the fortunes and interests of their employer. What industrial conflict there was, particularly strikes, had a ritual, pacific quality (Joyce 1980, p. 68).

The emerging paternalism was rooted in the dependence of workers on a specific employer. This was reinforced by the employment of more than one member of the family in the same mill. According to Joyce (1980, pp. 111–16), the family became a potent instrument of incorporation and deference in many of the mill communities. Rather than a linear differentiation as claimed by Smelser, the family was now *reconstituted* within the context of paternalism. Even in power-loom weaving, which had long been the preserve of women operatives, a new patriarchy was organized and harnessed to a wider paternalism: "Though operative employment of children in weaving existed before the 1840s it seems to have been limited in extent. The convergence of work and home roles was crucially facilitated by technological improvements, which meant that the number of looms that could be worked by the single operative increased in the 1840s. It was in that decade that the use of weavers' assistants, paid directly by the weaver as the piecer was by the spinner, increased enormously to meet the increased work load" (Joyce 1980, p. 58). The family buttressed an overweening paternalism which reconstructed the mill community under the unitary authority of management, extending both rights and obligations to the hands. Contrasting paternalistic styles developed according to whether the master was Whig or Tory, Anglican or Non-Conformist (Joyce 1980, pp. 201–39). In return for having their "welfare" looked after, the hands were expected to render avid allegiance to their provider's church and party. Finally, the rise of paternalism was accompanied by a new entrepreneurial ideology which replaced employers' earlier denial of responsibility for the poor with their leadership of a moral community shared by master and operative alike (Bendix 1956, pp. 99–116).

There were important exceptions to the new paternalism. First, a distinction should be drawn between small and large employers. The former

were less able to afford the “neofeudal” paternalism of the local “baron” and instead established more arbitrary and personalistic factory regimes. In Oldham, the heartland of the limited company, we find both smaller mills and the absence of employer identification with the community. Paternalism never developed there as it did in Blackburn, Ashton, Preston, or Bolton. In Burnley, a town of new cotton wealth, class domination was not softened by the legacy of a common historical identity binding employers and employees. In the big cities such as Manchester and Liverpool it was not possible to carve out a community insulated from the world outside. In the last instance paternalism always rested on the real subordination of labor to capital in the labor process, so that in Yorkshire, where mechanization had proceeded more slowly and mills were smaller, paternalism was weaker and independent labor movements were correspondingly stronger (Joyce 1980, pp. 76–79, 226).¹¹

I can now summarize the importance of the transformation of the factory apparatuses for the rise and fall of working-class militancy among cotton operatives in Lancashire. Under the patriarchal regime the family secured considerable autonomy from employers, whereas under the paternalistic regime the family was shaped, regulated, and subject to close surveillance by employers. From government by the family we move to government through the family. Along with the family, community lost its autonomy so that from a bastion of resistance it became a vehicle of domination. Under the patriarchal regime struggles burgeoned from the workplace into the wider political arena, whereas the paternalistic regime contained and regulated struggles within narrow limits. The militant defense of patriarchal production apparatuses was superseded by a distinctive working-class passivity in the Lancashire cotton areas in the second half of the 19th century. To be sure, other factors, such as the nature of the economic crisis facing the cotton industry and the form of state politics (Foster 1974), also contributed to the changing character of working-class struggles. But I have argued that changes in the form of factory regime are sufficient to explain the essential shifts in the interests, capacities, and, as a result, struggles of the leading sector of the labor force—the spinners.

¹¹ Joyce’s rich account of factory politics follows in broad outline the classic work of Schulze-Gaevernitz (1895), who, like Marx before him, took the Lancashire cotton industry as capturing the features of the most advanced industries in the late 19th century. Unlike Marx, however, he saw centralization, concentration, and mechanization leading to the incorporation of the working class. He shows that the more backward areas such as Yorkshire and his native Germany spawned a more radical politics than the peaceful and conservative industrial relations of the Lancashire cotton towns.

NEW ENGLAND: FROM PATERNALISM TO MARKET DESPOTISM

We have seen that market despotism was absent from precisely the process of production where Marx anticipated that its conditions would be most readily realized. In the transition from the throstle to the mule we found a correspondence between changes in the labor process (from the real to the formal subsumption of labor) and changes in factory regime (from the company state to patriarchal despotism). The second transition, to the self-acting mule, highlighted the influence of market forces in addition to the labor process in shaping factory apparatuses. Thus, the change from the formal to the real subsumption of labor was accompanied by the concentration and centralization of capital, so that instead of market despotism we find a paternalistic regime replacing patriarchal despotism. In the remainder of the paper I try to demonstrate that even together the labor process and market factors do not wholly determine the form of factory regime; we must also consider the character of proletarianization and state intervention.

The combined and uneven character of capitalist development—that is, the timing of industrialization in relation to the history of world capitalism and the combination of the capitalist mode with preexisting modes of production—sets the stage for the development of different factory regimes. We can see this already by crossing the Atlantic. Borrowing technology from England, the United States' cotton industry skipped many of the drawn-out stages from the preindustrial putting-out system and began its career with the adoption of Arkwright's water frame. Throstle spinning enjoyed a dominance in the United States that it never achieved in England: in England by 1811 there were already 12 mule spindles for every throstle spindle, whereas in the United States mule and throstle spindles were approximately equal in number. The reasons for the difference have to do with England's position as an exporter of fine cotton cloth, which the throstle could not produce; the use in England of cheaper cotton, which required more sophisticated technology; the availability in England of skilled artisans who could operate the mule; and the greater efficiency of the mule given factory costs in England (Cohen, in press; Jeremy 1981, chap. 10). Moreover, it was only two decades after the common mule had been introduced into New England that it was replaced by the self-actor. The same transition took over 40 years in England (Cohen, in press). Boston capitalists and their mill agents could therefore adopt machinery developed abroad without facing the resistance encountered in Lancashire, rooted in entrenched legacies of past forms of work organization and production politics.¹²

¹² The reasons for the more rapid mechanization of U.S. textile production and of U.S. industry generally has been the subject of a stimulating controversy sparked by

The impetus to mechanization came from the conditions set by the surrounding economy. The New England factory system developed in symbiosis with a viable small commodity production and subsistence farming so that throughout the region skilled labor was scarce and expensive. This prompted the introduction of machinery that would be less reliant on skilled workers than in England, where skilled labor was more abundant (Samuel 1977) and the welding of preindustrial and extraindustrial resources into collective organization presented a powerful obstacle to mechanization. In New England collective organization was both less urgent and more difficult, as workers could express their dissatisfaction by quitting. This in turn further encouraged deskilling to reduce learning time (Jeremy 1981, p. 214). In short, it was both more feasible and more profitable for New England millowners to assume direct control over the organization of work (Lazonick 1981).

How they did this depended on the supply of capital and *unskilled* labor. In southern New England and states to the south, what is known as the Rhode Island system emerged. There millowners facing capital shortage managed to recruit the labor of poor farm families. This system was nearer the English pattern of fierce competition among small-scale firms well suited to the production of a variety of fine and coarse cloths. Although the Rhode Island system began with a patriarchal regime, this soon dissolved into market despotism with overlookers directing piecers (Wallace 1978, pp. 177–80; Cohen, in press; Ware [1931] 1966, chap. 8; Jeremy 1981, pp. 210–12). In northern New England, however, the distinctive Waltham system developed to supply the power loom and a mass market for coarse but durable fabrics. Here capital abundance encouraged the expansion of firms to introduce economies of scale (Jeremy 1981, chaps. 10, 11). Rather than employ family labor, millowners drew out single female operatives from the surrounding region, and a very different transition in factory regimes took place: from paternalism to market despotism. It is this Waltham system that I want to examine here, because it underlines the influence of different patterns of proletarianiza-

Habakkuk's (1962) argument that labor scarcity led to the introduction of laborsaving machinery. This has been disputed at a theoretical level by Temin (1966), who argued that labor scarcity could not have had such an effect and that the rate of interest on capital investments was more important. At a more empirical level, Earle and Hoffman (1981) have tried to unhinge Habakkuk's thesis by showing that there was an abundance of cheap unskilled labor in many parts of the country, even more so than in England. According to them, mechanization was the result of two processes: higher returns to capital (because of lower wages) led to higher rates of reinvestment, and the shortage of skilled labor led employers to introduce machinery operated by low-wage semiskilled laborers. Finally, as Cohen (1984) has insisted, mechanization and direct control were also based on the collective weakness of the working class, skilled and unskilled alike.

tion on the political apparatuses of production. I shall draw on Thomas Dublin's study (1979) of the Lowell mills, which set the pattern for the region.

Financed by a small group of Boston capitalists, the Lowell mills opened their doors in the 1820s. They turned to the daughters of New England farmers for their labor. Wage labor and prospects of a new independence induced single women to leave their homesteads before marrying. Certainly their families did not require the extra income, and the women themselves decided how to dispose of their earnings. They lived in subsidized company boardinghouses under the strict supervision of matrons responsible to mill management. The boardinghouses tied workers to the mill and subjected them to "moral policing." Within the mills there was plenty of opportunity for arbitrary tyranny by male overseers. The employer's power of dismissal was absolute; if a woman left of her own accord she was blacklisted and automatically excluded from all the mills in the area (Ware 1966, pp. 265–67; Gersuny 1976).

In the 1840s the Lowell mills began to lose their monopoly of the most advanced technology. Increased demand for cloth and competition from other firms led to falling prices. On the shop floor the women experienced speedups and stretch-outs along with rate cutting. The labor process itself underwent changes as the self-acting mule replaced the throstle. According to one estimate, output per worker increased by almost 49% between 1836 and 1850, although daily wages increased by only 4% (Dublin 1979, p. 137). As conditions in the mills deteriorated, the "freeborn" daughters left, and management recruited its labor force from among the influx of immigrants, particularly Irish but also French Canadian, who arrived in New England in the late 1840s. There had always been immigrants in Lowell, but they were allowed to join the mills only when the owners, facing stiff competition, required a more tractable labor force. Whereas only 3.7% of those employed at Hamilton Manufacturing Company in 1836 were foreign born, by 1860 the figure was 61.8% (Dublin 1979, p. 138).

Mill management adopted new strategies consonant with changing technology and the intensification of labor on the one side and the changing labor force on the other. Originally, low wages had been based on the maintenance costs of the single female worker. Now they were based on the family labor system in which children were expected to contribute substantial income. Thus, we find that the proportion of school-age children at Hamilton rose from 2.3% of the labor force in 1836 to 6.5% in 1860 (Dublin 1979, p. 172). Adult and school-age children together contributed an average of 65% of family earnings in 1860, and among the many female-headed households the figure was 80% (Dublin 1979, pp. 173–74).

The transformation of the labor force—in particular, its pattern of reproduction—invited the transformation of the factory regime. The single women were controlled through a paternalistic regime, reflecting their independence, which rested on their ability to return to their homesteads. It was very different from the Lancashire paternalism, described above, which directly regulated the renewal as well as the maintenance of the labor force, governed through the family rather than without the family, and arose in response to the organized strength of cotton workers (in particular, the spinners), the declining competition among firms, and the real subsumption of labor to capital. However, the Irish and French Canadians, in contrast to the Yankee daughters but like the Lancashire operatives, were cut off from any subsistence economy. They were entirely dependent on wage labor for their survival. But unlike their fellow workers in Lancashire, they did not possess any powerful collective organization with which to resist untrammelled domination at work. They were not mobilized around a system of inside contracting. Nor had they built up a system of wage lists as a guarantee against wage cutting. On the contrary, they were hired and fired at the whim of the overseer, and piece rates were set unilaterally by mill managers acting in concert. Here indeed we find an example of Marx's market despotism.

The political apparatuses of production also shaped patterns of struggle. The daughters of Yankee farmers built up a solidary community around their boardinghouses, buttressed by Republican traditions. They challenged wage cuts with strikes and actively participated in the 10-hours movement. When these failed, they left the mills. From the beginning the Irish and French Canadians faced a coercive regime which pitted workers against each other. Lacking alternative sources of livelihood and often coming from even worse conditions, they accepted their lot in relative peace.

RUSSIA: MIGRANT LABOR AND THE COMPANY STATE

So far the study of the conditions of existence of different factory regimes can be summarized as follows. Changes in 19th-century Lancashire cotton spinning suggest that market factors and the character of labor's subordination to capital in the labor process set limits on the form of apparatuses of production, limits indicated by the transition from the company state to patriarchal and then paternalistic regimes. The comparative case of New England drew attention to a causal factor held constant and therefore unidentified in the Lancashire studies: the effect of only partial separation of workers from the means of subsistence, reflected in the transition from paternalistic regime to market despotism. Just as the New England mills illuminated the causal force of what was

taken for granted and therefore silent in the Lancashire comparisons, so the analysis of Russian factory regimes highlights a factor which, because it was uniform, both Lancashire and New England studies took for granted: the intervention of the state. Whereas in both Lancashire and New England the state intervened only “externally,” to uphold the self-regulation of capital accumulation, we shall see that in Russia the state not only regulated the reproduction of labor power but actually constituted the factory apparatuses. But first we must examine the effect of the labor process on factory regimes in Russia.

To an even greater extent than in the United States, in Russia late development had the consequence of reorganizing stages of industrialization (Gerschenkron 1966, pp. 119–42). The cotton industry came particularly late to Russia, expanding most rapidly in the first half of the 19th century. Calico printing of imported cloth was the first process to take root, followed by the weaving of cheap imported yarn; last to arrive was spinning. Unlike the state enterprises in woolen and iron production which employed serf labor, the cotton industry, developing under foreign sponsorship, hired wage laborers from the beginning, although in relation to the land the laborers remained serfs. Weaving began in large factories but moved into cottages as soon as workers had mastered the handloom. The putting-out system developed out of and at the expense of the factory so long as technology was relatively simple (Tugan-Baranovsky 1970, pp. 171–214). With the power loom, weaving reentered the factory, but only slowly. Cotton spinning, however, only really began in the 1840s when England lifted the prohibition on the export of the self-acting mule. Thus, spinning was factory based from the beginning and never went through the putting-out phase.

The rhythm of late development also shaped the relative standing of occupations within the textile industry: “The weaver’s trade was considered to be a more skilled, prestigious, and (more problematic) highly paid profession than spinning” (Zelnik 1982, p. 11). The Russian government even referred to weavers as a “labor aristocracy,” but Zelnik provides the necessary caution: “Of course the Kränholm weavers never functioned as independent artisans, and the discretion content of their work was minimal, limited almost entirely to questions of pace. But combined with the difficulty of gaining access to their ranks and their higher level of education . . . the small degree of autonomy that the weavers could enjoy in the early years of the factory’s existence elevated them in the eyes of their fellow workers” (Zelnik 1982, p. 12). Although still weak, the artisan traditions were stronger in weaving than in spinning, contributing to their relative standing in Russia. This hierarchy was the reverse of that found in England, where factory spinning emerged from an artisanal past and thereby retained its craft status despite deskilling, whereas the

greater discontinuity between handloom and power-loom weaving removed the artisanal legacy and with it the craft status of the English weaving operative. Whereas in England spinning continued to be dominated by men and weaving by women, by the end of the 19th century the opposite gender division of labor prevailed in Russia (Johnson 1979, pp. 17, 55).¹³

Although differences in production apparatuses can in part explain the differential involvement of weavers and spinners in collective protest, their common situation is more striking. The adoption of advanced techniques often under English or German management established the real subsumption of labor to capital for both and the basis of a common despotic order. The character of that despotic regime was shaped by two forms of state intervention: the orchestration of the flow of labor between capitalist industry and feudal or peasant economies, and the direct constitution of a company state by the central state. We shall deal with each in turn.

Emancipation left the majority of peasants materially worse off than before. Not only did they have to make heavy redemption payments for their allotments, but, for the most part, these were inadequate to yield even a bare subsistence (Gerschenkron 1965, pp. 741–42; Von Laue 1964, pp. 34–35). Overpopulation, poverty, and tax arrears mounted during the last four decades of the 19th century so that villagers were increasingly compelled to supplement subsistence production with independent,

¹³ Zelnik (1971, chap. 9) offers an interesting account of the 1870 strike by cotton spinners at the modern Nevskii mill in St. Petersburg. There we find a rudimentary system of inside contracting. Male spinners were supposed to deduct a fixed wage from their own piece-rate earnings to pay their helpers. The dispute arose from a long tradition in which helpers were paid for two or three holidays at Easter. The money came straight out of the spinners' own earnings. This particular April the spinners decided to buck tradition and deduct a proportional amount from their helpers' wages for the time missed. However, always suspicious of the spinners' dealings with their assistants, the factory administration took it into its own hands to pay the helpers directly for their Easter holidays by deducting the whole amount from the spinners' earnings. Finding that their incomes were in any case low that month, the spinners demanded redress. Management refused and the spinners struck. Zelnik does not tell us how typical was this system of inside contracting and, in a personal note, writes that the cotton industry has not been sufficiently researched for this question to be answered. One wonders whether the system was imported with the English management. It is noteworthy that the spinners did not have the autonomy of their English brothers. The foreman was continually interfering in their relations with their assistants and unilaterally deciding the distribution of tasks, something English spinners would never have tolerated. Yet the spinners did manage to prevent their helpers from entering the workshops during the strike—through force, persuasion, or sympathy? It also seems quite likely from the figures Zelnik cites that the wage differential between the helper and the spinner was less than in England where, between 1823 and 1900, the self-acting mule-spinners' wages were never less than 221% of their big piecers' (Hobsbawm 1968, p. 292).

nonagricultural domestic production or by hiring out their labor to industrial employers or former landlords. The emancipation legislation compounded the strangulation of the peasantry by continuing to make it extremely difficult to leave the village permanently for the city.

To achieve only limited urbanization, the state shored up the village commune (*obshchina*), extending its powers and responsibilities. It was responsible for the collection of state taxes and the annual redemption payments. The village council (*mir*) would sometimes impose forced labor on those in the community who did not discharge their financial obligations. It was impossible to sell one's land unless all tax arrears and over half the principal debt on the state redemption loan had been paid up. As if that were not enough, individuals could not leave the village permanently without the consent of the head of household, and where the *mir* had powers to redistribute land in accordance with the available family labor, parents were unwilling to release their children for fear of losing land. These "repartitional communes" included the greater part of the peasant population and of the allotment area of the country (Robinson 1932, pp. 112–13). The state also empowered the *mir* to control the issue of passports, essential for any movement outside the village. The *mir* decided not only who should receive passports but also for how long, from six months to three years. A peasant found outside his or her village without a valid passport faced immediate deportation "home." As was understood at the time of the reform, "The preservation of the *obshchina* meant substituting the bondage to the *mir* for the bondage to the *pome-shchik*" (Gerschenkron 1965, p. 753).

The passport system was only one aspect of the long arm of the commune which extended into the city. Like migrants to other urban settings, Russian peasants were often introduced to the city through kin, and their lives were circumscribed by village or regional networks and associations—*zemliaki*—which offered security, acted as recruiting agencies for jobs, and above all reinforced ties to the village back home.¹⁴ However,

¹⁴ Zelnik's analysis (1976) of the memoirs of Semen Kanatchikov brings out the parental and communal pressures that might be brought to bear on migrant workers who attempted to turn their backs on the village. In 1897, 87% of St. Petersburg's textile workers with families maintained their wives and/or children in the countryside (Bonnell 1984, p. 56). An 1899 survey of workers at the Emil Tsindel cotton mill reported that 94% of the work force of 2,000 were peasants and over 90% of male peasants possessed a land allotment (Johnson 1979, p. 40). But one has to be very cautious in inferring any continuing commitment to the village, as the average period spent in factory labor by these same workers was 10.4 years, and 56% had fathers who had also been factory workers (Koenker 1981, p. 50). Von Laue (1961, p. 65) refers to another study, according to which "76 per cent of even the poorest peasants who had no land sent money home, 92 per cent of those with an allotment of up to three *desiatinas*, only 62 per cent of those holding three to six *desiatinas*, but again 91 per cent of those with

recent work (Bonnell 1984, pp. 52–57; Von Laue 1961, pp. 70–71; Smith 1983, pp. 14–21) suggests that skilled workers and artisans had much weaker ties to rural life than the unskilled, who were not only newer to the city but also more likely to rely on the village as a form of social security because of low wages and vulnerability to dismissal.

What emerged, therefore, was a system of circulating labor migration in which the bulk of at least the unskilled workers retained a dual allegiance to land and industry, village and town. From the standpoint of capital, migrant labor meant low wages, covering only the costs of maintaining single workers while they were employed. The costs of rearing new workers and supporting the old and infirm were borne in the *mir*. Subsistence production subsidized capitalist profits. But the system of migrant labor was a two-edged sword. The possibility for workers to return to their villages gave them a certain independence and posed the problem of retaining their allegiance to the factory. Workers were housed in “dormitory cubicles” or “common barracks” to facilitate constant surveillance and military discipline. In addition, factory police, the company store, an elaborate system of fines, piecework, and the renewal of contracts every six or 12 months at the discretion of the employer could be used as instruments for the coercive extraction of effort only so long as workers could not “exit.” Here the state worked hand in hand with the factory regime to regulate the mobility of labor through the passport system. Workers could quit before the expiration of their contracts but only at the risk of losing their passports; without passports they could not move to another place or get a new employer.¹⁵

plots of six *desiatinas* and more.” Presumably such remittances do indicate a continuing commitment to the village. Between 1904 and 1906 the government underwent a volte-face in its agrarian policy. This was followed by the Stolypin reforms, enacted between 1906 and 1914, which encouraged peasant workers to consolidate their land, sell it, and leave permanently for the city (Gerschenkron 1965, pp. 783–98; Robinson 1932, pp. 208–42).

¹⁵ It is interesting to compare the company state described by Zelnik (1982) as it existed in the third quarter of the 19th century at Kränholm (at the time one of the biggest cotton mills in the world) with the company state of the copper mines of colonial Zambia before World War II (Burawoy 1982). In both we find (1) “colonial despotism,” based on nationality in the one case and race in the other; (2) a regime with arbitrary powers to legislate and execute as well as judge violations; (3) a juridico-police apparatus based on ethnic divisions among the work force (nationality in the one case and tribal divisions in the other); (4) the election or appointment of worker representatives—elders—who were supervised by management and were rejected and overturned by workers in times of conflict; (5) widespread use of fines and deductions as well as the holding back of pay until the completion of the contract; (6) use of physical punishment and arbitrary assaults on workers by supervisors (although the Russian system of corporal punishment, beating, and solitary confinement was absent in Zambia); (7) strict regulation of the movement of workers in and out of company

A comparison of Moscow and St. Petersburg illuminates the combined influence of the labor process and labor migration on the factory regime. Since the cotton mills began with an advanced technology and the real subsumption of labor, operatives had few resources with which to resist the depredations of the company state. Accordingly, the factory regimes of the cotton mills tended to be more coercive and more isolated from the world around them than were those of the metal fabricating industry, where mechanization was less advanced at the turn of the century. Although the industrial composition of both cities was mixed, the concentration of the textile industry in Moscow and the metal fabricating industry in St. Petersburg is one factor explaining the predominance of the company state in the former rather than the latter. But another factor is also important: Moscow had a long history of symbiosis with the rural hinterland, so that circulating migration was more common there than in St. Petersburg, where industrial development came later, was more abrupt, and drew on workers who were more skilled and from further afield. The looser relationship between community and work and between city and countryside—reflected in higher wages, more skilled workers, and less despotic regimes—contributed to a more solidary protest in St. Petersburg after the turn of the century.

Yet a third factor contributed to the different factory regimes in the two cities: direct regulation of production apparatuses by state apparatuses. St. Petersburg capitalists were more dependent on the central state (and foreign finance) than were Moscow capitalists, whose independence fostered autonomous company states. Thus, St. Petersburg capitalists with their more capital-intensive technology, higher wages, and shorter working hours were keener supporters of factory legislation, hoping to eliminate competition from firms which were more labor intensive, employing more women and children and for longer hours and lower wages. The Moscow capitalists often fell into the latter category and fought against state regulation of factory regimes (Tugan-Baranovsky 1970, pp. 321–40; Smith 1983, p. 74).

Throughout the second half of the 19th century, state regulation of factory administration was the subject of bitter conflict not only outside but also within the state. Thus, we find continual struggles, reaching their climax at the turn of the century, between the ministry of finance, which tended to defend capitalists' "right" to govern their workplaces without outside interference, and the ministry of the interior, which was committed to regulating factory despotism. The state interspersed repres-

premises; and (8) the existence of the company store, although it was less extortionate in Zambia. The colonial state and the absolutist state were actively involved in the regulation of the movement of labor but were reluctant to become entangled in industrial disputes unless they threatened law and order.

sion with occasional concessions but always increased its intervention. On the one side, strikes, for example, were never a private affair between capital and labor but, rather, a question of public order. They became the occasion for ritual affirmation of the state, whose might would be mercilessly deployed against helpless workers (Rimlinger 1960*b*, p. 245). On the other side, legislation, particularly the 1885 law, did attempt to establish a code of conduct for capital as well as a written contract and pay-books for workers. Factory inspectors were appointed to enforce the law but had neither effective sanctions over employers nor the confidence of workers, so were largely unable to improve conditions (Rimlinger 1960*a*, pp. 82–87). More significantly, the 1886 legislation extended police surveillance of factory towns, bringing factory and state closer together (Rimlinger 1960*b*, pp. 231–37).

When both direct repression and factory legislation failed, the state began to impose its own factory apparatuses. After, and partly because of, the textile strikes of 1896 and 1897, the ministry of the interior encouraged the development of what has been facetiously labeled “police socialism.” State-sponsored factory apparatuses were designed to give workers the opportunity to pursue economic grievances in the hope that this would divert them from the clutches of the Social Democrats. The most famous of these experiments was the Zubatov societies, named after their originator Sergei Zubatov, appointed chief of the Moscow Okhrana in 1896. But state sponsorship of the Zubatov societies was not without its contradictions, as the secret police found themselves defending their organizations against recalcitrant factory directors (Schneiderman 1976, pp. 145–55). Although Zubatov societies did appear in St. Petersburg, there it was the Gapon assembly that captured most attention and support from workers. Father Gapon, a disciple of Zubatov, was the inspiration and leader of the Assembly of the Russian Factory and Mill Workers, formed in 1903. In order to gain legal recognition the Gapon assembly was presented as a mutual benefit society, but its organizers intended it to go beyond self-help to demand basic economic and civil rights for workers (Sablinsky 1976, pp. 101–4). From the beginning Gapon saw the assembly as a means of advancing the interests of its members rather than a tool of state regulation. The Gapon assembly had struck an uneasy relationship with the government when the dismissal of its members at the Putilov plant precipitated a confrontation with management. The conflict rapidly escalated from the specific grievance to workers demanding elementary economic and political rights, including an eight-hour day, a minimum wage, freedom of association, and legal protection for labor, which in turn led to the demonstration and massacre of Bloody Sunday and the ignition of the 1905 revolution (Sablinsky 1976, pp. 143–271).

In the decade leading to 1905, production politics and state politics

became increasingly interwoven. The Zubatov societies intensified the presence of the state in the factory, whereas the Gapon assembly brought production politics into the public sphere. Instead of building confidence in the tsarist regime, the merger of the two forms of politics became a lightning rod for the massive uprising of 1905. Allowing workers to carve out a space for even such limited organizations could only fuel the momentum of struggles.

FROM THE SATANIC MILLS TO THE RUSSIAN REVOLUTION

How can we understand production as the site simultaneously of degradation and elevation, atomization and combination, isolation and association? That is the theoretical paradox with which this paper began. The solution has been to distinguish the labor process from the political apparatuses of production. Whereas the former could account for domination and fragmentation, the latter could account for resistance and struggle. I have shown that not only did the factory regime and labor process have independent effects on the formation of the interests and capacities of workers, but also these two aspects of production varied independently of one another. In a series of historical and international comparisons I successively isolated four factors shaping factory regimes in the textile industry of early capitalism. They were, in ascending order of generality: market forces, the labor process, the reproduction of labor power, and the state. But how does this help us with our historical anomaly—that the militancy of English workers before 1850 was absorbed and turned in a reformist direction, whereas the Russian workers' struggles of 1905 grew into the revolutionary movement of 1917?

I distinguished two modes of harnessing the family to accumulation under early capitalism. In the first, broadly English, pattern, the whole family is expropriated from access to the means of subsistence and becomes completely dependent on wage labor. The family wage is spread among a number of wage earners, and production relations are regulated by merging the family regime into the factory regime. In the second, which affected large segments of the Russian labor force, the family is split into two interdependent parts—the maintenance of the wage earner takes place at the site of production while the renewal processes are organized by the rest of the family in the village. Subsistence production permits low wages, and production relations are regulated through the company state.

The different patterns of proletarianization are linked to different types of struggles. Thus, prior to 1850 in the leading sector of English industry, male spinners sought to defend their patriarchal regime against the encroachment of capital. After 1850, in many parts of Lancashire, the

patriarchal regime was replaced by a paternalistic regime, that is, government through the family rather than by the family. The new regime effectively contained struggles within the parameters of production. In Russia, however, the company state fostered struggles for its dismemberment, in 1905 by artisans and skilled workers and in 1917 increasingly by skilled and unskilled workers in large enterprises (Bonnell 1984; Engelstein 1983; Smith 1983).¹⁶

The changing center of gravity over this period is due to the development of modern industry but also to the relationship of the state to factory regimes. In England the extension of political concessions to the working class during the second half of the 19th century—voting rights, trade union recognition, regulation of the working day, the repeal of the Masters and Servants Laws—tended to insulate production politics from state politics. In the same period, instead of extending concessions, the tsarist autocracy intensified repression and so furthered the fusion of state politics and production politics. In 1917 when the absolutist regime faced military and financial disaster, and rising disaffection in the villages and in the towns, the crisis of the state was transmitted directly to the factory. There it established the destruction of the old and the creation of new political apparatuses. Management no longer had the crutch of the official

¹⁶ This interpretation has recently been challenged by Hogan (1983a, 1983b). She argues that between 1906 and 1914 the St. Petersburg metalworkers' union acquired a new membership, as its composition was redirected from workers with varied levels of skill employed in large mixed-production factories toward a more homogeneous group of skilled workers in mid-sized factories facing work rationalization in the form of scientific management and job dilution. Unlike, e.g., skilled workers in England, the St. Petersburg metalworkers did not have the organizational resources to resist rationalization from within the factory. Therefore they were driven into the wider political arena to defend their position, shedding their loyalty to the Mensheviks and embracing the Bolsheviks. In other words, the center of gravity within the leading section of the workers' movement was shifting toward rather than away from the artisans and skilled workers. However, the evidence for this argument is less than convincing. First, it is not clear how much "rationalization" was actually implemented and how much was simply policy statement, intentions, or managerial ideology. Second, Hogan finds it difficult to give a precise account of when and where rationalization in its different manifestations was introduced. Third, she does not link the outbreak of collective mobilization among the metalworkers to those spheres of production most seriously affected by rationalization. Fourth, her data show that there was *some* continuity in union membership. Although a minority, the old-timers may still have been largely responsible for the new directions of metalworker protest. Finally, by stopping at 1914 she leaves open the relevance of her analysis for the unfolding of the revolution in 1917. Hogan's work nicely complements Haimson's classic papers (1964, 1965), which point to the mounting, but unsuccessful, strike wave of 1912–14 as evidence against any simple view that the destabilizing effect of the war was the essential precipitant of revolution. Like Haimson, Hogan insists that however important rationalization may have been in propelling metalworkers into the political arena, such processes have to be situated in a much wider context when one is trying to explain the broader revolutionary momentum of 1917.

and secret police, so workers could take into their own hands the regulation of production. Unwanted supervisors were carted out in the proverbial wheelbarrow, factory committees were established to oversee management and regulate the distribution of supplies, and workers' militia groups were formed as the coercive arm of the new factory regime. Not surprisingly, this transformation went furthest where the collapse of the state was felt most intensely: in the large state munitions factories.

At least in the beginning, direct worker control of production was not inspired by anarcho-syndicalist visions but was often the only way to keep factories open. Although capital initially was prepared to make concessions, the escalation of the revolutionary movement in the middle of 1917 led it instead to counter with sabotage. Now the factory committees were forced to turn worker control from a defensive measure into a more radical but still dimly perceived project of self-management. Moreover, as the economic crisis deepened, factory committees saw the necessity of central coordination; the fate of each depended on the fate of all. To the end the factory committees were ardent advocates of central planning. Indeed, in the first few months of the new regime they went further in this direction than Lenin himself, who was still optimistic about the potential of unfettered grass-roots initiative.

The character of the factory committees was shaped by what they replaced and the workers they represented. Unlike the metalworkers of the Clydeside, those of Petrograd were not steeped in conservative and sectional traditions. They were skilled workers without craft traditions. Their opposition to dilution and deskilling, for example, was much weaker than that of their brothers in England, whose organizations had grown up organically with capitalism (Smith 1981, pp. 42–45). Moreover, the coincident appearance of craft and industrial unions after 1905 meant that the sectionalism so stressed by Turner (1962, pt. 4) in his analysis of trade union growth in England was much weaker. To be sure, there were divisions between skilled and unskilled, between hereditary workers and *chernorabochie*, men and women, old and young. But the primary allegiance of workers—skilled and unskilled alike—was to their factory (Smith 1981; but also see Rosenberg 1978). Indeed, according to Goodey (1974), the factory committee was the most powerful institution in Russia at the end of 1917. Rather than obstacles to revolutionary mobilization, factory committees were its foundation, with unskilled workers continually pushing the more skilled workers in the direction of more radical solutions. The latter in turn sought to curb and channel the militancy of the new workers (Koenker 1981, pp. 317–28; Smith 1983, chap. 8). Recent social history, therefore, amply demonstrates that the success of the Bolshevik party lay in its ability to respond to rather than

create a working-class radicalism—a working-class radicalism that was in fact decisively shaped by the factory regime.

The factory committees prefigured a new version of the relationship between production politics and state politics: “The remarkable fact about the Russian Revolution is that for a few months workers’ organizations managed to combine democracy with centralisation in a way which avoided bureaucracy on the one hand and anarchy on the other” (Smith 1981, p. 40). But this experiment was short-lived. The factory committees were soon subordinated to the state, the party, and particularly the trade unions. The reasons for this, however, are still hotly debated. Was the subordination made necessary by the sectionalism and parochialism of the workers (Rosenberg 1978)? Or were the factory committees crushed because they posed a threat to the centralizing imperatives of the Bolshevik party (Keep 1976; Anweiler 1974; Brinton 1975)? Or did the more skilled workers who dominated the factory committees identify their own interests as the assimilation of those organs into a strong central state (Goodey 1974)? Or can we attribute the strangulation of the factory committees, at least in part, to Leninist prejudices which portrayed worker control as an infantile disorder, reduced all politics to state politics, and presented the new state as the guardian of the proletarian interest (Sirianni 1983)? Whatever the explanation for the suppression of the factory committees, the Russian experience does suggest that the installation of workplace democracy requires a corresponding transformation of state politics. As Rosa Luxemburg put it, “With the repression of political life in the land as a whole, life in the Soviets must also become more and more crippled” (Luxemburg 1970, p. 319)—a view echoed a few years later in the Soviet Union by Alexandra Kollantai and the Workers’ Opposition. But the inverse thesis may also hold, namely, that the successful transformation of the state can proceed only if there is also effective workplace democracy.

CONCLUSION

In December 1917, Antonio Gramsci wrote of the Russian Revolution as “the revolution against *Capital*”—the repudiation of the canons of historical materialism, of the laws expounded by Marx that anticipated the outbreak of socialist revolution in the most advanced rather than the most backward nations. Rather than reject *Capital*, I have attempted to reconcile it with the Bolshevik Revolution by distinguishing between the labor process and its political regime. The factory regime shapes the struggles emerging from the point of production, resolving the theoretical paradox in *Capital* between an account of the unswerving domination of capital on

the one side and of mounting resistance to that domination on the other. Taking Marx's own example of the cotton industry, I have shown how its factory regime varied with both place and time according to the nature of the labor process, market forces, the reproduction of labor power, and the form of state. Furthermore, I have shown how the factory regimes that emerged in the most advanced industry in 19th-century England and in Russia in the early 20th century were sufficiently different to explain the historical anomaly of English working-class reformism and the revolutionary spirit of Russian workers. In short, we do not have to abandon the point of production as the decisive arena for the formation of the working class.

But what does this theoretical innovation, the distinction between the labor process and production apparatuses, do for other aspects of Marxism? First, and most obviously, the importance of political and ideological elements of production calls for at least a reconsideration of the classic distinction between "base" and "superstructure." It is no longer possible to hold that the "base" is the arena of objectivity, of ineluctable laws, whereas the "superstructure" is the arena of subjectivity, of political action that translates inevitability into reality. Now, base and superstructure each are arenas of both objectivity and subjectivity. Second, if we can no longer talk of laws of production, we must also rethink our conception of the state. Politics can no longer be reduced to state politics. Instead we find, for example, production politics, gender politics (in the family), and consumption politics (in the community). Politics are defined first by their *arena* and only second by their *goal* or *function*. The state is still the decisive center of power in that it guarantees all other political apparatuses. What is distinctive about state politics is their "global" character: they are the politics of politics. But this arena conception of politics means that we cannot study the state outside its relationship to production politics, gender politics, consumption politics, and so on. Third, we must revise our understanding of socialism. It is no longer sufficient to concentrate on the transformation of the apparatuses of the state; we cannot avoid the distinct problem of destroying and reconstructing the apparatuses of production. The reconstruction of the state can lead only to a species of state socialism. Collective self-management which invokes collective participation at the level of production as well as at the level of the state requires the transformation of both sets of apparatuses along with their interrelations. Fourth, we no longer burden the working class with the mission of emancipating the whole of humanity. Nor, in despair, do we cry farewell to the working class, abandoning it for any social movement that catches the public eye. Avoiding the fallacies of philosophical imputation and fickle empiricism, I have undertaken a *sociological* analysis of how the sphere of production, in particu-

lar, the apparatuses of production, determines actual working-class interventions in history.

This leaves open several questions. What are the consequences of the transformation of production politics and/or state politics for other forms of politics, in particular, gender politics? To what extent are capitalist forces of production, more particularly, the capitalist labor process, compatible with collective self-management? Does collective self-management require a new technology, a new labor process? Can such a system of collective self-management, which involves collective guidance in central as well as production arenas, reproduce itself, or does it possess an inherent tendency toward bureaucracy or anarchy? Does it tend to collapse into capitalism or state socialism? In short, the concepts of production politics and production apparatuses force us to consider collective self-management as one specific form of socialism. Moreover, it is one whose appearance is certainly not inevitable, and it may not even be possible for more than short periods. Finally, who will lead the struggle for such a form of socialism? I have left open the precise relationship of the working class, however defined, to socialist projects. The foregoing agenda emerged from a comparative study of the Russian Revolution, focusing on the transformation of factory apparatuses, the rise and fall of factory committees, the destruction of the tsarist state, and the subsequent trajectory of the Soviet state. But if the history of the Russian Revolution raises these questions, it most certainly does not resolve them.

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