



Remaking Work, Remaking Space: Spaces of Production and Accumulation in the Reconstruction of American Capitalism, 1865–1920

Jason W Moore

Department of Geography, University of California, Berkeley, CA, US;
e-mail: jasonwmoore@hotmail.com

The era of US capitalist development between 1865 and 1920 offers a good opportunity to analyze the relational nature of social change at multiple scales precisely because it was a time of transition, for US and world capitalism alike. Existing accounts of the transition to monopoly capitalism in the US have focused on one or two geographical scales, such as the national economy or the shop floor. In this literature, scales are essentially treated as “containers” within which social change occurs. The possibility that the containers themselves may be fundamentally altered is not addressed. In contrast, this paper views labor process transformations, and transformations of the social division of labor, as dialectically bound. In particular, I seek to explain how the American transition to monopoly capitalism shaped, and was shaped by, class conflict and competitive pressures at multiple scales—the shop floor, the region, and the national and global divisions of labor.

Introduction

It is now widely recognized by geographers—and, increasingly other social scientists—that capitalism functions at and produces multiple geographical scales (Brenner 1999; Harvey 2000; Swyngedouw 1997). Unfortunately, recognizing the existence of multiple scales hardly clarifies matters. There remains the question of the relevant scale—or the decisive relationship between scales—for the problem at hand. (This question is all the more vexing for the fact that both spatial configurations and the scales themselves are ever-shifting.) This is a particularly big problem for the literature on capitalist development, where scholars have traditionally assumed a decisive scale of action, and generalized from that basis. For instance, the debate over capitalist origins pits a “productionist” camp, emphasizing the production unit, against a “circulationist” camp prioritizing world-scale forces (Brenner 1977; Wallerstein 1974). This paper seeks to undermine such one-sided determinations by analyzing the spatial moment of American capitalism’s transformation between the end of the Civil War and the close of World War I.

Existing accounts of the transition to monopoly capitalism in the US have focused on one or two scales—the national economy or the relationship between shop-floor struggles and the national political economy (see, respectively, Baran and Sweezy 1966; Gordon, Edwards and Reich 1982). In this literature, scales are essentially treated as “containers.” Social change occurs within scales, and the relations between them may shift. The possibility that “the containers themselves [may be] fundamentally recast” (Smith 2000) is not addressed. I propose an alternative that challenges such containerization of scale, and puts the political economy of the production of space—emphasizing the mutability of scale—at the center. In particular, I seek to explain how the American transition to monopoly capitalism shaped and was shaped by class conflict and competitive pressures at multiple scales—the shop floor, the region, and the national and global divisions of labor.

The era of US capitalist development between 1865 and 1920 offers a particularly good opportunity to analyze the relational nature of social change at multiple geographical scales precisely because it was a time of *transition*, for the US and world-system alike. Put abstractly, social systems during periods of stability may compensate for disruptions occurring at any given scale. During periods of transition, however, changes at any one scale exert a much more powerful—and potentially disruptive—effect on social relations at other scales. In these times, the mutually relational nature of social relations at multiple scales becomes particularly evident. Such periods of crisis and change illuminate the fault lines of the old sociospatial order, and their realignment into a new one.

The Civil War resolved the explosive contradictions posed by the coexistence of plantation and industrial capitalism in one country. The American South was liberated from British hegemony and the question of Western settlement was decided in favor of independent small-holding agriculture. The victory of Northern industrial and Western agrarian interests over the Southern planter regime allowed the US to pursue “core” rather than “peripheral” capitalist development—that is, a course of development that resembled northwestern Europe rather than Latin America.¹ This allowed, for the first time, the geographical integration of a far-flung continental economy with an enormously rich resource base (Agnew 1987; Arrighi 1999; Post 1995).

At the same time, new contradictions moved to center stage. The consolidation of a political regime favorable to core capitalist development opened the door to rapid economic growth and the consolidation of antebellum territorial conquests. In the half-century after 1865, American capitalism effected a transition from a quasi-national-scale system dominated by regional interenterprise competition, interregional political divisions, and small- to medium-scale industry to a nationally unified monopoly capitalist order dominated by “giant corporations”

competing on a national, continental, and even world scale. Increasingly, industrial production was mass production (Baran and Sweezy 1966; Hounshell 1984). The US working class grew a whopping 700% (Kinder and Hilgemann 1978:117). Manufacturing value-added increased seventeen-fold (Blackford 1988:48). Seven times as much railroad track was laid between 1860 and 1873 as in the previous three decades (Agnew 1987:49). Such growth and expansion contained two major contradictions. First, individual capitals were quickly exposed to the promises and perils of intensified competition in a national market. Second, capitalists soon found themselves facing an increasingly large and militant industrial working class.

These contradictions drove mutually relational transformations on several scales. I advance three propositions on this subject.

First, the shop floor is a geographical scale whose spatiality reflects and embodies class relations. The later 19th century witnessed a transition from the workshop and simple factory organization to the modern industrial plant. The rise of the giant corporation and the rise of the giant factory are dialectically bound. Increasingly subject to conscious planning and aided by technological innovations in concrete, steel, and electricity, owners now designed plants to fragment workers spatially and to replace workers' cooperation with managerial coordination. Without such reconstruction of the workplace "built environment," the success of the scientific management movement is scarcely conceivable. Prior to scientific management, skilled workers wielded considerable autonomy and power on the shop floor (Montgomery 1979, 1987). With the advent of continuous flow production methods and mass production at the turn of the century, the layout of the shop floor changed. Firms restructured the shop floor so that managers, rather than workers, increasingly set the pace of work. Not only were work teams split up and reorganized, but the skilled workers who remained were often geographically separated from the semi- and unskilled workers (Pietykowski 1995). This was crucial, from management's perspective, because skilled workers had historically been the most militant.

Second, industrial capital for the first time in world history became fairly mobile, thanks largely to new transportation and communications technologies such as the railroad, the steamship, and the telegraph. Indeed, the "time-space compression" that attracted such notice in the late 20th century has its origins in these 19th-century innovations (Arrighi 1999; Harvey 1989). Some capitalists had always been mobile; one can think of the Dutch VOC (East India Company) in the 17th century or city-state finance capitalists even earlier (Arrighi 1994). What was profoundly new in the later 19th century was the new-found mobility of industrial capitalists. This new mobility permitted the relocation of production facilities from the largest cities to industrial

suburbs as a strategic response to workers' power (Ashton 1978; Gordon 1978).

Third, and in many ways most fundamentally, the rise of the giant factory and the giant corporation was predicated on the creation of the giant economy. Never before had such an expansive "national" economy assumed the leading role in the capitalist world-system. It is more useful to think of American capitalism as "continental" rather than national. Always before, geographical "bigness" had been a positive liability—France and Spain, for instance, fought losing battles through the early modern era against their more compact British and Dutch adversaries. It was American capitalism's great innovation to weld together the new social form of the giant firm with the new spatial forms of the giant factory and the giant continental economy.

The creation of such an economy depended on a deeper and wider division of labor between town and country, within (so-called) national economies and on a world scale.² After midcentury, urbanization proceeded at a fantastic pace throughout the advanced capitalist world, brought about by two main developments: (1) the globalization of agricultural markets and the shift towards more specialized and capital intensive forms of agriculture, characterized by successive "agricultural revolutions," leading to successive waves of agrarian dispossession and the destruction of rural handicrafts; and (2) the diffusion of large-scale industry under the impetus of larger national markets and the technologies of the "second industrial revolution" (Barraclough 1967: 45–55; Hobsbawm 1987:342–343; Thompson 1968). "In short, the workers were being gathered into factories and the factories concentrated in industrial towns and urban areas" (Barraclough 1967:52). Of course, many dislocated peasants could not be accommodated within their respective national economies, especially in Southern and Eastern Europe. The globalization of agriculture set in train during the boom years of the 1840s through the 1870s led to a renewed phase of worldwide primitive accumulation in subsequent decades, driving tens of millions of peasants from the land, many of whom found their way to US cities (Moore 2000; Wolf 1982). It was precisely these workers who provided the crucial ingredient for America's remarkable industrial expansion and its ascent to world power.

Thus, the dialectical antagonism of town and country assumed central importance throughout this period, for the local organization of production no less than global structures of accumulation. At mid-century, Britain supported the creation of a global agricultural market through its repeal of the Corn Laws in 1846 and worldwide investment in transportation infrastructure. Vast new areas of agricultural production were integrated into the world market. The crisis of overproduction that inevitably resulted when the British-led boom went bust in 1873 led to a much more thoroughgoing capitalist transformation of

agriculture in these areas. On the one hand, such capitalist transformation meant dispossessed peasants, enlarging the national—and, to a certain extent, the global—reserve army of labor. On the other hand, it allowed for sustained industrial growth and capital accumulation by creating rural markets for producer and consumer goods, which farm households could no longer do without or produce on their own. Even more basically, the subordination of agriculture to the “universal competition” of industrial capitalism created new imperatives for increased productivity, thereby effecting a global “revolution in the methods of feeding an industrialized and urbanized population” (Barraclough 1967:50).

These global transformations were the decisive precondition for the reorganization of the industrial labor process that in time allowed for sharp increases in productivity. To this issue we will now turn.

Labor Process Transformation and the New Shop Floor Geography

By the later 19th century, the giant factory emerged as the spatial expression of American monopoly capitalism. The rise of the giant factory was the necessary corollary to the rise of the era’s ascendant giant corporations. Far from an automatic process deriving from technological imperative, the transition from the artisanal workshop and simple factory to the modern industrial plant was driven by the growing concentration of workers—and deepening class conflict—at the point of production.

The American working class grew 164% between 1870 and 1913, more than double the rate of its chief rival for world economic leadership, Germany (calculated from Maddison 1995:246). Between 1860 and 1900, the number of US manufacturing workers grew fourfold, from 1.5 to 6 million (ASHP 1992:12). In the three decades after 1860, “average shop size jumped from six [workers] to over twenty,” so that by 1899 40% of manufacturing was taking place in factories (Laurie 1989:116; Robinson and Briggs 1991:623). The largest factories became truly enormous, increasing “from roughly 1500 workers per establishment [in the later 19th century] to a range of 20,000 to 60,000 during the 1920s” (Gordon, Edwards and Reich 1982:116, 133). Such concentration encouraged unionization, which posed even greater problems for employers. After the setbacks of the 1890s, the labor movement grew from some 548,000 workers to 2.5 million between 1900 and 1909 (Webb 1911:606).

The growing scale of production in the decades following the Civil War was not at first accompanied by a transformation of industrial organization. The primary factor behind manufacturing growth remained increasing inputs of labor relative to fixed capital. Factory production in leading industries such as metalworking was still controlled

by skilled workers operating either as “inside contractors” or as foremen (Clawson 1980:126–144; Montgomery 1979). Indeed, the number of skilled operatives doubled from one to two million and their share of the workforce held steady between 1870 and 1890 (Shefter 1986:202).

The sharp increase in the spatial concentration of workers provoked a “control crisis” beginning in the 1880s (Edwards 1979:51). The methods of labor supervision practiced in the small- and medium-sized shops of competitive industrial capitalism (ca. 1800–1870) were increasingly unable to cope with the growing scale of production. “This crisis emerged from the contradiction between the firm’s increasing need for control [under conditions of intensified interfirm competition in a national market] ... and its diminishing ability to maintain control ... The need for control was a concomitant of the firm’s continuing growth” (Edwards 1979:51).

As a result, industrial capitalists were compelled to reorganize the production process. There is, of course, a vast literature on labor process rationalization that focuses more or less narrowly on the social relations of production (see Braverman 1974; Clawson 1980; Edwards 1979; Gordon, Edwards and Reich 1982; Marglin 1974). In Richard C. Edwards’ (1979) formulation, the control crisis of the 1880s led capitalists to substitute *structural* control for *hierarchical* control, which depended on the active and personalized intervention of foremen and managers. The form of structural control that prevailed in the later 19th century was technical control, “the classic image” of which is the assembly line, whereby managerial control is embedded in the material structure of work (Edwards 1979:20–21, chapter 8). Edwards gets it partly right. Capital asserts its structural-technical control not only through the organization of work—itself a spatial process—but also through factory design itself, an issue to which we shall turn momentarily.

Technical control rested upon the foundation of the scientific management movement. To assert this kind of control, managers needed to undermine skilled workers’ power and to reorganize the labor process by separating conception from execution in the overall production process. This was Frederick Winslow Taylor’s contribution. Taylorism’s³ three central principles run as follows (Braverman 1974:112–121). First, managers should study every aspect of the production process so that they, rather than workers, are in control. In this way, “the labor process is to be rendered independent of craft, tradition, and the workers’ knowledge” (Braverman 1974:113). The second principle is the “*separation of conception from execution*”: a strict division of labor should be imposed on the production process so that “all possible brain work [is] removed from the shop floor” (Taylor, quoted in Braverman 1974:114; emphasis in Taylor). Managers increasingly do the “brain work,” directing the workers with precise instructions. The

third principle is the assertion of managerial power on the shop floor. The application of the first two principles involved management's study of the labor process and the imposition of a strict division between mental and manual labor. The application of the third principle entailed the specific and ongoing direction and continuing reorganization of every step in the production process so that progressively greater power was transferred to management in the interests of producing progressively greater amounts of surplus value.

The application of these principles was uneven across industrial sectors and even between firms within the same sector (Edwards 1979; Storper and Walker 1989:154–182). Rather than focus on this unevenness, however, I wish to draw attention to how Taylorism dovetailed with changes in the geography of the factory and shop floor. This allows us to treat the shop floor as a geographical scale that is made and remade through the process of class conflict as well as intercapitalist competition (Sayer and Walker 1992:119–121; Storper and Walker 1989:165–166). It is therefore useful to conceptualize the scientific management movement as a major element of capital's strategy to take advantage of shifts in the broader social division of labor to reconstruct the *scale* of the shop floor.

The era of scientific management shaped and was shaped by the emergence of a new factory form. While factories certainly existed before the 1870s (Haraven and Langenbach 1978; Hounshell 1984), only after the Civil War did the modern industrial plant emerge as an “identifiable architectural form” in the US (Nelson [1975] 1995:11). The new factory was made possible by technological innovations in structural steel and reinforced concrete, but especially by advances in electrical power. By the later 1880s, engineers had pioneered the industrial application of electrical power, permitting two developments. First, electricity relieved industry of its strong dependence on rivers for power.⁴ As we shall see in the next section, this would have profound implications for capital mobility in the ensuing decades. Second, the existence of a “central generating source” made possible new factory designs, “including decentralization, dispersion of work areas, and assembly lines” (Nelson 1995:11; Trachtenberg 1982:55–57). Factories were increasingly subject to conscious planning; they were no longer merely a “place to store machinery” (Nelson 1995:12, 15, 22). Gone was the “hollow square” factory. In its place, engineers devised a number of alternatives. “In general the trend was from the hollow square to the other forms, from the multistory shop to the single-story plant, and from the ‘group’ to the ‘output’ (emphasizing product rather than machine function) plan” (Nelson 1995:21). Factory planners now considered not just the general type of production, but “the *flow of work* between departments” (Nelson 1995:23; emphasis added). Technical control was increasingly expressed in factory design. Rather than

allowing workers to consciously organize the cooperation necessary for production, capital remade factories to ensure that managers could now assume the coordinating function and use this power to fragment workers at the point(s) of production. This became especially evident by the early 20th century, when capital began building larger plants away from the epicenters of working class conflict in the big cities:

Large corporations ... changed plant design significantly [in the early 20th century]. As plants grew larger, firms gradually abandoned the classic nineteenth-century model of the single open shed. A number of important technical innovations [architectural expressions of technical control], such as reinforced concrete for construction and electric power for traveling cranes, railroads, and other handling equipment, permitted more flexible plant design. After 1895–1900, ... most modern factories “consisted of a series of interrelated buildings rather than a single large structure.” For example, foundries were located in separate structures, isolated from the main assembly areas. Even within the general flow of assembly production, plant activities were fragmented among disparate shops and structures. (Gordon, Reich and Edwards 1982:139; internal quotation from Nelson [1975] 1995:23)

The new spatial organization of the factory meant that workplace fragmentation reflected the ascent of managerial control at the expense of skilled workers’ control. Before 1900, work revolved around the skilled craftsman; after the turn of the century, it was the workers who revolved around the production process (Gartman 1993; Meyer 1982). In the auto industry, even before the advent of the assembly line, Henry Ford had reorganized the shop floor in a “progressive layout” system (Gartman 1993:33). In the machine-tool shops, operators were confined to a single machine, and the machines were bunched together. “Unnecessary” movement was eliminated, as operators were limited to a single workstation, which could include two or more of the same type of machine. As a result, direct supervision became much easier. Most significantly, “progressive layout ... ensur[ed] a rapid, continuous flow of work past operators.” As such, it was a crucial precondition for assembly-line production (Gartman 1993:33). Of course, the reorganization of work in the auto industry cut both ways. The power of the skilled worker was undermined, but a large and increasingly militant stratum of semiskilled workers was created. Thanks to the shop-floor geography of continuous-flow production, this stratum would assert a decisive leadership role in future class struggles (Edwards 1979:128).

Beginning in the 1880s, industrial capitalists faced a crisis of control on the shop floor, brought about by the rapidly growing output of giant factories, concentrating unprecedented numbers of workers under

the same roof. The scale of production had grown enormously, but the organization of production had not. The artisanal mode of organization, which pivoted on the technical expertise and coordinating function of skilled workers, proved a formidable barrier to industrialists' aggressive efforts to expand production and extract surplus value. The growing concentration of workers, combined with attacks on skilled workers' control over the labor process and concomitant efforts to increase productivity through the speed-up, proved to be favorable terrain for labor unrest. Capital responded to the deepening control crisis with strategies aimed at reorganizing the relations between workers in the production process not only by separating conception from execution as much as possible, but equally by introducing a new spatial form, the giant factory, which made possible new shop floor layouts that favored capitalists' rather than workers' control.

As we shall see, these transformations of the production process were, in turn, made possible by broader changes in regional industrial geography.

Moving Capital and Staying Put: The Changing Geography of Industrializing America

Antebellum factories were usually run by owner-operators. That changed after the Civil War. A new industrial bourgeoisie emerged, whose power derived from its command over increasingly large-scale industry. While industrial capital's power was rooted in particular locales of industrial production, industrial capitalists were no longer bound to these locales. Industrial capital's unique power in this era flowed from its ability to command *industrial space* from a distance. This was made possible by the growing concentration of capital, a renewed communications–transportation revolution, and a new relationship between town and country on a national and world scale (Mumford 1938). These developments allowed capital to move production facilities “with strategic regard for working-class power, while capitalist class members relocated to centralized urban environs, stabilized their living arrangements, and began the long-term process of building class institutions” (Lembcke 1995:158).

Hence, one important consequence of the separation of ownership from direct control was that capitalists could stay put even as their capital became more mobile:

The separation of labor and capital allows for the independent unification of units of labor and the independent unification of units of capital, within the limits posed by the properties inherent in each element. Because the value of capital can be converted to a money form (liquefied) it can be merged, whereas labor, being a human element, can only be unified (collectivized) through social organization,

a process that is more problematic than the merging of capital. Moreover, the intervention of capital in the processes of collectivization disrupts and retards the formation of the working class. Those interventions are intended to stall the progression of working-class collectivity and the history of those interventions constitutes much of the story of US capital-labor relations. (Lembcke 1995:158)

The growing stability of capitalists relative to *capital* enhanced bourgeois class power, insofar as all social classes rely on social networks for the assertion and defense of class interests. Up to the late 19th century, all classes' social networks were primarily local.⁵ With the growing concentration of capital, the separation of ownership from control, and new transportation and communications technologies, this changed for industrial capitalists. No longer obligated to live near their factories, industrialists could move to big cities in greater numbers and begin to develop more cohesive intraclass networks and a class consciousness that transcended local conditions. "Thus, when families that owned steel mills around Pennsylvania merged their assets, they moved to Philadelphia, where they have remained for a hundred years. Capitalist class members, of course, move around. But their wealth ... enables them to diminish the effect of distance on social relationships; eg, costly travel and communication networks are no object" (Lembcke 1995:161; see also Lembcke 1991-92:433).

While capitalists were settling in the major cities, those major cities themselves were undergoing a major transformation. The late 19th century was the era of the *industrial city* (Gordon 1978).⁶ In contrast to the commercial city of the antebellum period, the industrial city corresponded to the demands of mass production capitalism in two main ways. First, it offered proximity to consumer markets and thereby facilitated large-scale production. Second, it offered a relatively large reserve army of labor (Gordon 1978:37). While manufacturing employment increased as fast or faster in mid-sized relative to large urban centers until the end of the Civil War, by 1870 industrial production was concentrating in a few major cities such as Chicago, Cleveland, and New York. Between 1860 and 1900, the ten largest industrial areas' share of national value-added in manufacturing increased from 25% to 40% (Gordon 1978:39). While new power sources such as steam and electricity were important in concentrating industry in big cities (Laurie 1989:115), the growing industrial dominance of the largest cities was rooted in the need to resolve the looming "control crisis" discussed in the previous section.

Industrial capitalists concentrated manufacturing capacity in the big cities because large urban space enhanced their ability to extract surplus value relative to medium-sized towns, where workers enjoyed more community support during labor disputes. In the smaller cities,

industrial capitalists faced a number of obstacles not present in the larger ones. Ideologically, they were challenged by preindustrial social classes whose worldviews were markedly different from those of the industrialists; middle strata in these towns often supported workers against industrial capital (Gutman 1976:233–292; Laurie 1989). In the bigger cities, industrial capital had more success in winning over middle strata, whose fortunes were more closely tied to the new capitalist order. The reserve army of labor tended to be larger and ethnic divisions within the working class stronger (Kolko 1984). Consequently, the balance of class power in the big cities *initially* favored capital over labor. Capitalists in the larger cities “suffer[ed] fewer losses during strikes, achieve[d] greater discipline over their regular factory, and in general, extract[ed] more surplus value from their workers” (Gordon 1978:41).

Yet the industrial city generated some fatal contradictions. Huge numbers of industrial workers were concentrated in ever-larger production units. These larger production units were concentrated in growing cities, whose share of US population *tripled* between 1850 and 1910, accelerating sharply in the last two decades of that period (North, Anderson and Hill 1983:145; Walton 1996:102). In this respect, the US differed little from other major industrializers such as Russia and Germany, where growing numbers of workers were concentrated in large factories (Barraclough 1967:51–52; Wolf 1969:75).⁷ The number of strikers in the US more than tripled between 1881–1885 and 1901–1905, and the geographical spread of strike activity now included the Midwest as well as the Northeast (Earle 1992:422–428; Gordon 1978:46–47).

By the turn of the century, rising labor unrest had led capitalists to relocate their factories to industrial suburbs—often creating them as a result. Between 1899 and 1909, central city manufacturing employment increased by 40.8%, while ring employment rose by 97.7% (Gordon 1978:46–47). “Once installed at a sufficient distance from the center of labor agitation, these firms achieved a measure of insulation from the epidemics of central-city strike activity to which they had previously been vulnerable. In moving to the suburbs, corporations sought to isolate their work forces from central-city unrest” (Gordon, Edwards and Reich 1982:138–139). At first, employers experimented with company towns, but the 1894 Pullman strike soured many capitalists on this option (Ashton 1978:71). Increasingly, industrial capitalists moved their plants to production sites just outside big city limits. Between 1899 and 1905, “new suburban manufacturing towns were being built in open space like movie sets. Gary, Indiana, constructed from 1905 to 1908, is the best known example” (Gordon 1978:48). In these industrial suburbs, capital could “reassert both economic and political control” (Ashton 1978:71).

The crucial precondition for this move from the cities to the suburbs was the growing concentration of capital, especially the 1898–1902 merger wave (Edwards 1979:44–45). While the concentration of capital was ongoing throughout the industrial capitalist world, it was most advanced in the US (Blackford 1988:55, 72, 80; Hobsbawm 1987: 43–44; Schmitz 1993:46–48). The merger wave put far more capital into the hands of capitalists, thereby increasing their capacity to move production sites away from high class-struggle areas (Gordon 1978:50). Indeed, industrial consolidation and class struggle from below were but two sides of the same coin. “The list of strikes [around the turn of the century] reads like a roster of consolidations: the railroads, McCormick, Carnegie (Homestead), Pullman, General Electric, US Steel, International Harvester” (Edwards 1979:50). Relocation dovetailed with a renewed employers’ offensive, taking the form of a vigorous open-shop drive by manufacturers’ organizations (Montgomery 1979:26, 57–63; Nelson 1995:129–130).⁸ Not coincidentally, the merger wave continued to favor increased plant size in the early 20th century (Gordon, Edwards and Reich 1982:133).

The connection between capitalist relocation to industrial suburbs and workers’ struggles provides us with a good opportunity to step back for a moment to ask how we might conceptualize the relationship between transformations of the technical and social divisions of labor (Marx 1977:470–480; see also Marx and Engels 1970). How are transformations of society and transformations of the labor process dialectically bound? The literature on labor process transformation views skill reduction as the historical process of class conflict through which capitalists seek to wrest a progressively greater amount of control from workers and in so doing increase the rate of exploitation (Braverman 1974; Edwards 1979; Marglin 1974). Missing from this literature is a consideration of the geographical dimensions of class struggle, in particular the distinctive geographical bases of class power. Deskilling is a crucial capitalist modality of spatial control and power. When combined with the concentration of capital and the separation of residential ownership from direct control, deskilling meant industrial capital could draw upon a much larger pool of workers over much broader geographic space. Workers could now be drawn from the far corners of the globe, and found their way to the US in growing numbers during this era. These new workers, many lacking industrial job experience, were suddenly employable in huge numbers. By the turn of the century “almost anyone could work in the large factories because jobs in those factories increasingly required only nominal skills” (Gordon, Edwards and Reich 1982:118). This also meant that employers could use ethnic hiring policies to set workers against each other (Kolko 1984). A larger reserve army tended to keep wages from rising too fast, although real wages in the advanced capitalist centers

continued to increase throughout the period (Hobsbawm 1987), especially in the US relative to Europe (Montgomery 1987:172). Even in 1900, real wages in the US were 65% higher than in Britain, and Britain's wages were relatively higher than those on the Continent (Stalker 1999:12).

The combined result of residential stability for the bourgeoisie, skill reduction for workers, and the separation of ownership from control was that industrial capital could now move productive capital as a strategic weapon in the class struggle. This had two big impacts on the class struggle. First, industrial capital could "jump scale"—circumventing and, to a certain extent, dismantling "historically entrenched forms of territorial organization" (Brenner 1999:62). In this case, jumping scale meant that industrialists developed social networks and institutional forms that allowed them to operate on a regional and even national scale much more effectively than could workers' organizations (Wilentz 1984:16). By the turn of the century, and especially after World War I, capital was able to subject the labor movement to "an awesome attack by the employers, the courts, and the states," not to mention the ideological assault of so-called welfare capitalism (Green 1980:101), effectively rolling back the gains of the previous two decades. Crudely put, "capital was more broadly organized than the workers, and the workers lost" (Edwards 1979:50).

The second decisive effect of industrial capital's mobility was the concentration of the industrial bourgeoisie in the big cities and the power it could wield over industrial, working-class suburbs. Residential stability was an important geographical aspect of industrial capitalist class formation. The flip side of this process was that industrial capital could now disrupt working-class communities by relocating factories, thereby disrupting working-class formation. It is, of course, true that capital could not then—and to this day cannot—relocate at will. Recall, however, that this was a period of rapid industrial expansion. The old modes of industrial organization were becoming increasingly costly, owing to rising working-class unrest and escalating interenterprise competition on an increasingly national scale. Thus, during the era of transition to monopoly capitalism, the costs of abandoning established centers of production were reduced considerably.

Capital's ability to relocate in this era was so important because working-class consciousness develops over time in particular *places*. "In short, it is the *length of time* a group of working people reside *in a particular place* ... that is the essential combination of factors in the formation of social solidarity" (Lembcke 1995:163, emphasis added; see also Storper and Walker 1989:157). Lembcke (1991–1992, 1995) estimates this length of time to be two to three generations, about fifty years, because consciousness develops over time through the intergenerational transmission of values in specific places. Because

working-class families have relatively fewer resources to overcome distance, this intergenerational transmission must occur locally. The disruption of local ties through capital relocation therefore disrupts transmission, which consequently stunts the development of militant working class politics. For capital, the fact that workers' consciousness develops in specific locales makes "external" solutions through relocation rather than "internal" solutions of restructuring the preferred strategy:

Internal solutions are inherently problematic [for capital]. The slate of local history can never be wiped entirely clean ... Therefore, industries frequently opt for radical locational shifts to places where they can create new employment relations and labor politics. In this external solution, new communities of firms and workers are constructed on fresh terrain, usually in regions that have not hitherto had an important presence in the industrial economy. Workers must in effect chase after these industries and build territorial solutions anew. (Storper and Walker 1989:179)

From this perspective we can make sense of the connection that Lembcke draws between working-class militancy in a particular place with roughly fifty-year cycles of industrial relocation (1995:163–164). This seems about right. We have already seen how industrial capital moved from the big cities to industrial suburbs in the early 20th century. Capital again began to move after World War II, with roughly similar disorganizing effects on the working class (Davis 1986:117–121). What remains to be seen today is whether Lembcke's fifty-year cycle is subjected to the same kind of "time-space compression" that has characterized other capitalist cycles (Harvey 1989), and if so, whether workers or capitalists fare better because of it.

By the early 20th century, industrial capitalists had dramatically increased their mobility relative to workers. The growing concentration of capital, combined with the rapidly developing transportation and communications infrastructure, made possible the separation of ownership from direct control. The bourgeoisie was now free to congregate in big cities, which had a positive impact on their social coherence and consciousness as a regional—even national—class. These developments also allowed capital to move production from relatively high class-struggle areas to relatively low class-struggle areas, first from the medium-sized cities to the big cities, then from the big cities to the new industrial suburbs. This spatial strategy had a profoundly disorganizing impact on workers, whose power rested on place-bounded social networks.

The reorganization of the labor process and the movement of factories from the cities to the suburbs at once rested upon and made possible massive immigration. The sources of the agrarian transformations that allowed for the upsurge in immigration can be found in the

changing division of labor between town and country in the US, and in the world-economy as it entered a new era of global expansion and restructuring.

Remaking the US Town–Country Division of Labor in World Perspective

Transformations of the labor process and the geography of industrial regions in the US were local expressions of a profound shift in the world capitalist system⁹—a shift that was part cause and part consequence of US capitalism’s rise to world power. In this section, I explain how the reconfiguration of the town–country division of labor, within the US and on a world scale, at once shaped local and regional transformations and rendered possible US capitalism’s ascent. Two aspects of this reconfiguration of the rural–urban dialectic are highlighted: (1) the expansion of scale, principally in the form of US expansionism in the American West; and (2) the production of a interregional division of labor, marked especially by the rise of the Midwest as the epicenter of agroindustrialization as the distinctive feature of US capitalist development.

The Emergence of an American Empire: “Manifest Destiny” as Global Expansion

The role of US territorial and capitalist global expansion in shaping the world division of labor was not confined to the period after the onset of the Spanish–American War in 1898. Over the previous three decades, US governmental and business agencies had set about creating a dynamic and cohesive national political economy through the subordination of the American South and, most importantly, through the conquest and colonization of the American West. This was the precondition for the projection of US power overseas.

In contrast to the European powers, as well as ascendant Japan, 19th-century American expansion took the unusual form¹⁰ of national rather than colonial expansion. This gave American capital tremendous advantages. National-continental expansion was considerably cheaper than overseas colonial expansion. More significantly, the creation of a continental economy—unprecedented in modern world history—gave the US a distinct competitive advantage in the struggle for world supremacy that attended the crisis of British hegemony in the later 19th century:

The US state enclosed an economic space that was not only much larger and more diversified, but also far more malleable than the economic space enclosed by Imperial Germany—a space, that is, that could be depopulated and repopulated to suit the requirements of high-tech agricultural production more easily than the smaller and more densely populated German economic space could. In the course

of the [1873–1896] Great Depression, this competitive advantage translated into the progressive displacement of German by US agricultural surpluses so that the already larger US domestic market grew much faster than Germany's. (Arrighi 1994:292)

In other words, the US was in the right place at the right time—the era of the “second industrial revolution,” marked by the development of mass production systems based on the new technologies of steel, electricity, the internal combustion engine, and so forth. These new production systems demanded a new relationship between core and periphery. “It was no longer a question of exchanging European manufactures—predominantly textiles—for traditional oriental and tropical products ... Industry now went out into the world in search of the basic materials without which, in its new forms, it could not exist” (Barraclough 1967:54). This was a decisive shift from the “first” industrial revolution. “Whereas in the eighteenth century Britain provided all the essential raw materials for its industries ... in 1913 Britain was self-sufficient only in the supply of coal” (Woodruff 1973:663). The ascendant steel, chemical, electrical, and automobile industries provided a decisive impetus to imperial expansion in order to secure raw material supplies as well as markets.

What set the US apart from the era's other leading capitalist powers was not imperialism or lack of it, but the existence of sparsely settled yet ecologically rich contiguous space. Thus the American empire was built initially on the frontier. “Until 1898 American ‘imperialist’ investments had been limited mainly ... to the American West” (Cochran and Miller [1942] 1961:312). US imperialism was distinctive but not “exceptional.” Between 1870 and the early 1900s,

the American West was the great natural-resource reservoir and the investment arena for eastern US and western European capital. In that sense, *the region was part of the wider subordination of colonial sectors to the requirements of metropolitan-based economies*. With a largely monocultural focus based on the exploitation of natural resources for export, those rural, hinterland economies were linked to centers of industry and manufacturing in a decidedly dependent way. Hence, the great advances in production and in the accumulation of wealth in the Atlantic-centered industrial economy depended heavily on resources from the American West ... [I]t was the world of eastern (and European) capital—not the sturdy work of the solitary prospector or the sodbuster—that provided the major impetus to change in the West. (Robbins 1994:62–63, emphasis added)

The railroad was the means by which the American West was transformed into an arena for massive capital investment, a growing consumer market, and a major supplier of agricultural products and raw materials. With the elimination of the last effective Indian resistance

in the 1870s and the completion of the first transcontinental railroad in 1869, it became possible to create, in effect, a region that corresponded unusually well to the specific needs of mass production capitalism. American railroads “seemed to create new spaces, new regions of comprehension and economic value, and finally to incorporate a pre-historic geologic terrain into historical time” (Trachtenberg 1982:58–59).

The region’s size, and the relatively greater mobility of both labor and capital within it—thanks to the railroad—provided US capital with a decisive advantage over its international rivals, who were forced to rely on more costly forms of colonial expansion to achieve the same ends. The geographical distinctiveness of US capitalism is revealed in the contrast between American and European rail networks. In the first place, US railroad expansion reversed the relationship between locomotive and track that prevailed in Britain. Americans innovated by laying track as cheaply as possible—at as little as one-tenth the cost of British railroads—and by building stronger locomotives capable of balancing on such cheap track (Hugill 1993:174–175). Whereas European “mechanized transport appropriated existing roads and horse tracks as it overturned an older society and culture, [in the US] the railroad seemed to ‘open’ places for settlement, for raw materials and transport to markets” (Trachtenberg 1982:58). It was no accident that this American mode of railroad expansion was subsequently adopted by British capital overseas (Vance 1988:129).

The US railroad network—which by 1915 was nearly double the *combined* mileage of the six other leading national systems (Headrick 1988:55)—made possible the massive extraction of natural resources from the American West crucial to US industrialization: iron, copper, zinc, gold, silver, coal, and (above all?) *oil* (Agnew 1987:49). “The ribbons of steel that everywhere penetrated the mountain West ... [permitted] the rapid expansion of an integrated, metropolitan-industrial system surrounded by peripheral population centers in resource-rich regions that paid tribute to the manufacturing core” (Robbins 1994:88; see also Agnew 1987:111). From this perspective, throughout the American West it was not so much “modes of production” but “modes of extraction” (Bunker 1985:chapter 2) that determined the region’s capitalist formation (White 1991:243).

Railroad expansion provided, in Alfred Chandler’s phrase, “the first modern business enterprises” (1977:chapter 3). As such, it would establish “important precedents” for the large industrial firms that would emerge in the later 19th century. Beyond this, railroads tended to annihilate regional markets in favor of national—even international—markets, at once intensifying interenterprise competition and forcing industrial firms to develop new means of coordinating and administering far-flung production and distribution activities. The geographical expansion and integration of the nationwide *social* division of

labor also shaped the *technical* division of labor: “Expanding markets ... encouraged the use of more complex machinery in manufacturing ... This new and increasingly complicated machinery [—embodying ‘complicated’ knowledge that once resided in the heads of workers—] in turn spurred further increases in output and so provided another pressure for expansion and continued growth” (Chandler 1962:23).

These pressures culminated in a new phase of global expansion once the US emerged from depression in 1896. US-based transnational firms held over \$1 billion in foreign assets by 1895, and \$2.5 billion by 1914; this latter figure amounted to some 7% of the US gross national product, a level that would not again be reached until 1966 (Barff 1995:53; Chandler 1977:369; Zinn 1980:293). As we might expect, given the interplay between the competitive pressures arising from various layers of the social and technical divisions of labor just discussed, the largest and most organizationally advanced firms were at the vanguard of overseas expansion. By 1902, “Europeans were already speaking of an ‘American invasion’” (Arrighi and Silver 1999:130).

The Centrality of Agrarian Transformation

In the postbellum era, American expansionism shaped and was shaped by the capitalist transformation of US agriculture and the emergence of a massive agroindustrial complex in the Midwest. American capitalist agrarian transformation, mediated by British free-trade policies, began to affect agrarian societies worldwide, especially in Europe. American grain entered the world market in the later 19th century, precipitating a prolonged crisis in European agriculture. The resulting social disruption drove millions of peasants from the land. Many of these found their way to North America, providing the labor power necessary for the mass production revolution.

The development of American capitalism, then, was distinctive in several respects. In the first place, in contrast to the British “agricultural revolution” of the 17th and 18th centuries (Thompson 1968), agricultural innovation directly fueled industrialization through a massive farm implements industry (Post 1995; Pudup 1987). American industrialization’s historical specificity is found in its *agroindustrial* character. Its geographical specificity is found in the emergence of the Midwest as a new region. Secondly, while American agriculture generated a modest surplus population (Laurie 1989), the main source of labor power for agroindustrialization was found in those agrarian societies rendered vulnerable to the leveling effects of a world grain market. Finally, the emergence of the Midwest as the agroindustrial powerhouse of the US—and, eventually, the world-system—hinged on the conquest of the American West, which supplied the necessary raw materials and gave the US the decisive edge in the competition for world leadership in the 20th century.

In contrast to its rivals, the US became at once a major industrial power *and* a major agricultural exporter. The deepening commercialization of agriculture pushed forward a new capitalist division of labor within the national economy that allowed for the transition to mass-production monopoly capitalism. “So long as the bulk of the population lived on farms or in small towns, commodity production confronted a barrier that limited its expansion” (Braverman 1974: 272). Among other things, rising agricultural productivity permitted a rapid reallocation of the country’s labor force away from agriculture. While agriculture occupied just over half the US workforce in 1870, its share had fallen to less than a third by 1910 (White 1991:244).

Thus, capitalist agrarian transformation forms a decisive moment in the creation of a “universal market” (Braverman 1974:271–283). The rapid growth of food processing, outstripping agricultural expansion, was a decisive factor in Midwestern industrialization by midcentury, and meatpacking’s “disassembly line” was in motion by the 1830s (Cronon 1991:211, 229, 243; Giedion 1969:93–95; Page and Walker 1991:292–293). The social basis for such agroindustrialization had been established even earlier, during the agrarian class struggles of the 1780s and 1790s. This was the crucial moment of primitive accumulation in the US (Post 1995), dramatized by the defeat of farmers’ revolts against taxation—and therefore the necessity of market production—such as the Whiskey Rebellion. With the victory of capitalist interests over subsistence-oriented freeholding agriculture in the North, by the 1840s and 1850s Northern and Midwestern farmers had become increasingly dependent on commodity production rather than diversified home production (Friedmann 1978; Post 1995). This commercial orientation laid the groundwork for the massive railroad construction that characterized mid-19th-century America. Railroads transported crops to urban markets—and by steamship to increasingly distant markets in Europe (Wolf 1982)—and carried back from the cities consumer goods such as clothing and producer goods such as threshers and reapers. As in industry, by creating more integrated national and international markets, the railroads intensified the competitive pressures faced by American farmers, and with these pressures came new insecurities.

After the Civil War, millions of settlers flowed into the West. Between 1860 and 1900, the number of farms grew from 2 to 5.7 million, and cultivated land increased from 407 to 838.5 million acres (Shannon, 1968:51). The mass market—the foundation of the mass production system that necessitated scientific management—was, therefore, only partly urban. Even in 1910 a majority of the country’s population still lived in rural areas, although that would change by World War I (Walton 1996:102). The mass market was still largely a country store (Page and Walker 1991:309). As farm households

became more specialized and dependent on heavy capital inputs such as reapers and threshers, they began to consume an ever-larger amount of *producer goods* and, because time was increasingly scarce, they consumed progressively more *consumer goods* (Friedmann 1978).

As farm households in the North and Midwest became increasingly specialized commodity producers, interregional inequality rose sharply. All regions saw some industrialization, measured by the number of manufacturing workers. Yet there was tremendous disparity, especially between the Midwest and Northeast on the one hand and the primarily extractive and agricultural economies of the South and far West on the other. While one-third to one-half the workforce in the former regions was employed in manufacturing by 1910, just one-eighth to one-quarter of the latter regions' employment was industrial. In 1910, the Northern industrial regions contained 48% of US population but were responsible for 68% of manufacturing output. The South fared particularly poorly; it was "drained of its resources" and thereby "sank into a tributary condition as the most backward section of the national economy." Despite westward expansion, the South's share of national primary-sector employment continued to rise in the later 19th century (Agnew 1987:110–111). Moreover, the "export of Southern cotton underwrote northern economic expansion," thanks to tariff barriers that raised prices for industrial goods (Agnew 1987:114).

If the South helped pay for industrialization, and westward expansion helped consolidate the new continental division of labor, it was in the Midwest that US capitalists pioneered the distinctive pattern of late 19th-century American capitalist development, agroindustrialization. Building upon the increasing market orientation and agricultural innovation of its farmers between the 1830s and 1850s, the Midwest emerged as a dynamic agroindustrial complex based on the complementarity of specialized commercial agriculture and urban industrialization centered on both producer- and consumer-goods sectors, especially food-processing and the manufacture of agricultural implements (Page and Walker 1991; Post 1995; Pudup 1987). Thus, Midwestern agroindustrialization came to embody the most basic and well-known characteristics of US capitalism as it began its rise to world hegemony: (1) a pattern of "autocentric" development whereby capitalist development proceeded according to the national integration of agriculture and industry, in contrast to the extroversion of British capitalism, for which free trade was essential for its survival; and (2), following the consolidation of this agroindustrial complex, the emergence of "Fordism," that system of mass production that so captured the attention of contemporary European observers (Arrighi and Silver 1999; Friedmann and McMichael 1989; Gramsci 1971: 277–318; Page and Walker 1991).

Agrarian transformation, which constituted the basis of US industrial prowess, was itself part of a global movement towards capitalist agriculture that took place under British hegemony. Between the 1850s and 1880s, world food exports rose from 4 million tons a year to 18 million, and to 40 million tons in 1914, a level that would not again be attained until the 1950s (Ponting 1991:244–245). In the after-math of Britain's repeal of the Corn Laws (1846), the world grain market experienced rapid growth, much of it supplied by producers located in "frontier" zones. Russia and the US, the world's leading wheat producers, exported between 8 and 20 times as much wheat in the early 1870s as they did in the 1840s, and world wheat exports would increase another sixfold between 1873 and 1929 (Friedmann 1978:546; Hobsbawm 1975:191; Wolf 1982:319). American wheat farmers exported fully *one-third* of their crop by 1900 (ASHP 1992:52).

Especially in grain-producing regions, rapid world-market growth entailed an acceleration of social differentiation and insecurity in the US and Europe. Indeed, American developments were functionally related to subsequent European agrarian crises. In the US, farmers invested in machinery (primarily reapers) and sought to acquire new land (even at inflated prices), resulting in further indebtedness and insecurity after the boom had subsided (Post 1997).¹¹ The mechanization of agriculture led to sharply rising productivity. "Using automatic binders to cut and tie bundles of wheat, the ... farmer could plant 135 acres of wheat in 1890, nearly 20 times more than in 1860" (ASHP 1992:52; see also Friedmann 1978; Laurie 1989:122–127). Higher productivity in turn led to a crisis of overproduction on both a world and a national scale by the 1870s. Prices fell sharply, which was very bad for farmers but good for urban working-class consumers, and very good for the industrial capitalists who paid their wages (Agnew 1987:52–54; Friedmann and McMichael 1989).

In a situation where grain producers through the world were integrated into the same competitive market, US agriculture's productivity quickly set in motion agrarian upheaval in Europe once the British-led boom turned to depression in the 1870s. By the 1870s and 1880s, "American wheat, sold in Europe at lower prices than the domestic product, brought on a crisis in European peasant agriculture, sending a migrant stream of ruined peasants to seek new sources of livelihood in the burgeoning Americas" (Wolf 1982:319; see also Agnew 1987:53; Woodruff 1973:704). The crisis was particularly severe in Eastern and Central Europe (Potts 1990:132). Between 1880 and 1920, 23.5 million immigrants arrived in the US (Agnew 1987:52). So great was immigration from southeastern Europe that the latter had "become part of the American industrial economy" by the turn of the century (Montgomery 1980:210).

These immigrant workers provided the labor power upon which the 20th century's leading industries were built. In so doing, they reinforced the processes of agroindustrial specialization and rationalization that proved so disruptive to the older "producing classes"—especially skilled craft workers and farmers. The emergence of a new working class shaped by the new basic industries, the rising discontent of the old working class, and the continual disruptions to working-class consciousness brought about by industrial capital's new mobility all contributed to a new round of bitter class struggles that shaped class structure and conflict in the 20th century.

Conclusion

Rather than focus on one dimension of social change confined to a single geographical scale, I have instead offered an alternative account of American capitalism between 1865 and 1920 that shows how social transformations at one scale were inconceivable without simultaneous transformations at other scales. Scientific management was necessary to solve the "control crisis" of the 1870s and 1880s, but the "solution" to the crisis involved far more than reorganizing and rationalizing the social relations of production narrowly conceived; it required new factory forms, which in turn were made possible by the new technologies of the "second industrial revolution," such as electricity and steel. Yet, new factory forms were useless if industrial concentration brought together too many workers too fast, leading to costly labor unrest, so relocation from the cities to industrial suburbs became a crucial element in capitalist restructuring. These new production centers could exist, however, only with dependable supplies of raw materials, and only with dependable markets. This required a new, national-scale division of labor between town and country that, for the first time, integrated the continental expanse of the United States. Natural resources were extracted from the West. Consumer- and producer-goods markets were created as a result of the proliferation of small-farmer commodity production throughout the country, especially in the Midwest. As they were integrated into increasingly competitive (and global) markets, these producers were forced to become ever more specialized and, as a consequence, ever more capital-intensive. This promoted industrialization in the crucial capital-goods sectors, because farmers now needed threshers, reapers, binders, and other implements to survive in a highly competitive market. Specialization also meant that farm households now needed to purchase many more items for household reproduction (including many foodstuffs) that they had previously manufactured at home or traded for locally. Moreover, agricultural specialization produced foodstuffs relatively cheaply, allowing for a massive expansion of the industrial working class.

All these developments shaped and were shaped by developments in the world capitalist system. The transformation of American agriculture, in particular, had both causes and consequences that were found beyond the boundaries of the US. Britain's repeal of the Corn Laws was an important factor in creating a world agricultural market, which expanded dramatically over the next seventy years. US grain exports rose dramatically over the following 15 years (North 1966: 284). "By 1870 the American economy depended so much upon foreign markets for the agricultural surplus that the ups and downs for the next thirty years can be traced in large measure to the success or failure of marketing each year's wheat and cotton crop. No matter how many markets could be found, more always seemed to be needed" (LaFeber 1963:9–10). Beyond the US, American agriculture, compelled towards rising productivity by its integration into national and world capitalist markets, precipitated major agrarian crises in Europe. Far from undermining US development, such crises only served to reinforce it further, as European immigrants provided a readily exploitable labor supply for rapid industrialization.

All of this social change "from above" encountered the resistance of workers and farmers, whose struggles unfolded differentially according to their position in the labor process, the relative fixity or mobility of capital, the power of the state, their organizations' capacity to forge a unifying culture, and the spatial concentration of workers. In the course of postbellum capitalist development, regional movements of workers and farmers dissolved in favor of organizations increasingly national in scope, the consequence of a new transportation and communications infrastructure and the integration of the national economy. Industrial capital clearly had the upper hand, exercising its superior mobility to disrupt working-class consciousness and organization. Yet the very strategies capital pursued to undermine labor's challenges would, in a matter of decades, confront capital with successive waves of working-class revolts, first in the 1930s, then in the later 1960s and early 1970s, and, quite possibly, again in the early 21st century.

Acknowledgments

I am greatly indebted to Diana Carol Moore Gildea, with whom an initial draft of this paper was written, for comments on successive drafts. I would also like to thank Giovanni Arrighi, Ben Brewer, Carolyn Cartier, Brett Clark, John Bellamy Foster, Peter Grimes, Andrew Herod, Ho-fung Hung, Yukio Kawano, Dan Pope, Beverly Silver, and an anonymous reviewer for *Antipode*. Special thanks go to Dick Walker for a careful reading of this paper in draft.

Endnotes

¹This is not to say that there was no uneven development within the US, as we shall see.

² This paper's angle of vision prioritizes the town–country division of labor as a dialectic of sociospatial change distinct from, but mutually relational with, the technical division of labor (following Marx and Engels, especially 1970; Marx 1977:470–480; see also Moore 2000:125–129). Unfortunately, Marx and Engels specify neither the scale at which the former dialectic operates nor the factors that distinguish “town” and “country” from each other. As a preliminary hypothesis, I would argue that the town–country dialectic operates at multiple scales, from city–hinterland relations at the regional scale to national formations to the world-economy. Furthermore, I suggest that O'Connor's (1998) distinction between conditions and forces of production is useful for distinguishing town and country. In the cities, land is primarily a *condition* of production (eg land ownership is a condition of industrial production). In the countryside, land is not only a condition but also (primarily) a *force* of production; it is an instrument one can use for primary production (eg, agriculture).

³ “Taylorism” here is but a convenient term to reference the broad range of ideas and practices corresponding to the emergence of a highly rationalized and abstract managerial approach to production. I make no claim that Taylor's ideas were adopted very widely.

⁴ In 1869, “almost half the American manufacturing establishments drew power from waterwheels and turbines” (Trachtenberg 1982:57).

⁵ This was true with the exception of finance and (some) mercantile capitalists, whose networks had been transnational from the Middle Ages (Arrighi 1994).

⁶ For Gordon (1978), urban development is discontinuous and determined by class struggles over the labor process rather than by a reified logic of agglomeration or technological change. In other words, urban development and uneven development between the country and the city stem from forces endogenous to the class struggle and capital accumulation. Gordon (1978) identifies three main stages of capital accumulation that correspond to three stages of US urban development: the commercial city, the industrial city, and the corporate city.

⁷ While all three countries generated powerful working-class movements, US capital did not have to contend with a serious threat of social revolution, in large part because the dangers of industrial concentration were partially offset by two factors. First, once the new communications and transportation infrastructure was in place, the continental scale of the US economy afforded industrialists relatively greater freedom to relocate manufacturing facilities to more favorable locales. Capital's greater capacity to command space was complemented by ethnic cleavages among immigrant workers, many of whom saw their stay in American as temporary (Kolko 1984).

⁸ For example, the Detroit area was such an attractive location for industrial growth in part because the Employers' Association of Detroit had by 1912 “virtually obliterated the local labor movement outside the building trades” (Nelson 1995:129; see also Rubenstein 1992:234–235).

⁹ My approach here borrows heavily from Dale Tomich (1990), who stresses that “local” and “global” transformations are irreducible to and, at the same time, mutually formative of each other. In his study of sugar and slavery in 19th-century Martinique, Tomich (1990:7) argues for a world-historical approach to the study of local social transformation (including the labor process) that treats “world, national, and local phenomena” as analytically distinct but not empirically discrete:

The concern of this study is not simply to examine the interaction of distinct global and local “levels.” Rather, it attempts to go beyond the fact of the extroversion of the colonial economy and its domination by European capital in order to *unite* the local history of plantation slavery ... with the history of world capitalism. Instead of approaching world, national, and local dimensions as discrete empirical entities, it treats them as mutually formative parts of a larger whole. Such a focus on the global ensemble of exchange relations, material and social relations of production, and the political mediations between them as a unified, structured, continually evolving

totality permits the historical specification of each of the relations and processes constituting colonial slavery ... The history of Martinique can thereby be understood not merely as "local particularism" but as part of the global processes of capitalist development. This approach reveals the world historical character of local processes while giving specific historical content to the concept of world-economy through the concrete analysis of particular phenomena. (Tomich 1990:6; emphasis in original)

¹⁰ This was true except for Russia, for whom frontier expansion served a broadly similar function (see Wallerstein 1989:chapter 4).

¹¹ Whatever short-run gains farmers may have earned, the long-run consequence for them as a class was increased debt and instability (see Luxemburg 1972:410; Shannon 1957:9–10). Some five to eight million people left the farms for the cities between 1860 and 1890 (Laurie 1989:124).

References

- Agnew J (1987) *The United States in the World-economy*. Cambridge, UK: Cambridge University Press
- Aronowitz S (1973) *False Promises: The Shaping of American Working-Class Consciousness*. New York: McGraw Hill
- Arrighi G (1994) *The Long Twentieth Century*. New York: Verso
- Arrighi G (1999) The global market. *The Journal of World-Systems Research* 5(2):217–251
- Arrighi G and Silver B J (1999) *Chaos and Governance in the Modern World System*. Minneapolis: University of Minnesota Press
- American Social History Project (ASHP) (1992) *Who Built America? Working People and the Nation's Economy, Politics, Culture, and Society*. Vol 2. New York: Pantheon Books
- Ashton P J (1978) The political economy of suburban development. In W K Tabb and L Sawers (eds) *Marxism and the Metropolis* (pp 64–89). New York: Oxford University Press
- Bairoch P (1982) International industrialization levels from 1750 to 1980. *Journal of European Economy History* 11:269–333
- Baran P and Sweezy P (1966) *Monopoly Capital*. New York: Monthly Review Press
- Barff R (1995) Multinational corporations and the new international division of labor. In R J Johnston, P J Taylor and M Watts (eds) *Geographies of Global Change* (pp 50–62). Cambridge, MA: Blackwell
- Barraclough G (1967) *An Introduction to Contemporary History*. New York: Penguin
- Becker W H (1984) 1899–1920: American adjusts to world power. In W H Becker and S F Wells, Jr (eds) *Economics and World Power* (pp 173–224). New York: Columbia University Press
- Blackford M G (1988) *The Rise of Modern Big Business in Great Britain, the United States, and Japan*. Chapel Hill: University of North Carolina Press.
- Bluestone B and Harrison B (1982) *The Deindustrialization of America*. New York: Basic Books
- Braverman H (1974) *Labor and Monopoly Capital*. New York: Monthly Review Press
- Brenner N (1999) Beyond state-centrism? Space, territoriality, and geographical scale in globalization studies. *Theory and Society* 28:39–78
- Brenner R (1977) The origins of capitalism: A critique of neo-Smithian Marxism. *New Left Review* 104:25–92
- Brenner R and Glick M (1991) The regulation approach: Theory and history. *New Left Review* 186 (July/Aug.):45–119
- Bunker S G (1984) *Underdeveloping the Amazon*. Urbana: University of Illinois Press

- Chandler A (1962) *Strategy and Structure*. Cambridge, MA: MIT Press
- Chandler A (1977) *The Visible Hand: The Managerial Revolution in American Business*. Cambridge, MA: Harvard University Press
- Clawson D (1980) *Bureaucracy and the Labor Process: The Transformation of US Industry 1860–1920*. New York: Monthly Review Press
- Cochran T C and Miller W ([1942] 1961) *The Age of Enterprise: A Social History of Industrial America*. Revised ed. New York: Harper and Row
- Cronon W (1991) *Nature's Metropolis*. New York: W W Norton
- Davis M (1986) *Prisoners of the American Dream*. New York: Verso
- Earle C (1992) *Geographical Inquiry and American Historical Problems*. Stanford, CA: Stanford University Press
- Edwards R (1979) *Contested Terrain: The Transformation of the Workplace in the Twentieth Century*. New York: Basic Books
- Engels F (1979). *The Housing Question*. Moscow: Progress Publishers
- Faulkner H U (1959) *Politics, Reform, and Expansion 1890–1900*. New York: Harper
- Friedmann H (1978) World market, state, and family farm: Social bases of household production in the era of wage labor. *Comparative Studies in Society and History* 20(4):545–586
- Friedmann H and McMichael P (1989) Agriculture and the state system: The rise and demise of national agricultures, 1870 to the present. *Sociologia Ruralis* 29(2):93–117
- Gartman D (1993) The historical roots of the division of labor in the US auto industry. In B Berberoglu (ed) *The Labor Process and Control of Labor* (pp 21–43). Westport, CT: Praeger
- Geyer M. and Bright C (1996) Global violence and national wars in Eurasia and America: The geopolitics of war in the mid-nineteenth century. *Comparative Studies in Society and History* 38(4):619–657
- Giedion S (1969) *Mechanization Takes Command: A Contribution to Anonymous History*. New York: W W Norton and Co
- Gordon D M (1978) Capitalist development and the history of American cities. In W K Tabb and L Sawers (eds) *Marxism and the Metropolis* (pp 25–63). New York: Oxford University Press
- Gordon D M, Edwards R and Reich M (1982) *Segmented Work, Divided Workers*. Cambridge, UK: Cambridge University Press
- Gramsci A (1971) *Selections from the Prison Notebooks*. Edited by Q Hoare and G N Smith. New York: International Publishers
- Green J R (1980) *The World of the Worker: Labor in Twentieth-Century America*. New York: Hill and Wang
- Gutman H (1976) *Work, Culture, and Society in Industrializing America*. New York: Vintage
- Haraven T K and Langenbach R (1978) *Amoskeag: Life and Work in an American Factory City*. New York: Pantheon Books
- Harvey D (1989) *The Condition of Postmodernity*. Cambridge, MA: Blackwell
- Harvey D (1998) The geography of class power. In L Panitch and C Leys (eds) *The Communist Manifesto Now: Socialist Register 1998* (pp 49–74). London: Merlin
- Harvey D (2000) *Spaces of Hope*. Berkeley: University of California Press
- Headrick D (1988) *The Tentacles of Progress: Technology Transfer in the Age of Imperialism, 1850–1940*. New York: Oxford University Press
- Hobsbawm E J (1975) *The Age of Capital, 1848–1875*. New York: Meridian
- Hobsbawm E J (1987) *The Age of Empire, 1875–1914*. New York: Vintage
- Hounshell D A (1984) *From the American System to Mass Production, 1800–1932*. Baltimore: Johns Hopkins University Press
- Hugill P J (1993) *World Trade since 1431*. Baltimore: Johns Hopkins University Press
- Hymer S (1972) The multinational corporation and the law of uneven development. In J N Bhagwati (ed) *Economics and World Order* (pp 113–140). New York: Macmillan

- Kinder H and Hilgemann W (1978) *Anchor Atlas of World History*. Vol 2, *From the French Revolution to the American Bicentennial*. New York: Doubleday
- Kolko G (1984) *Main Currents in Modern American History*. New York: Pantheon
- LaFeber W (1963) *The New Empire: An Interpretation of American Expansion 1860–1898*. Ithaca, NY: Cornell University Press
- Laurie B (1989) *Artisans into Workers: Labor in Nineteenth-Century America*. New York: Noonday Press
- Lembcke J (1991–1992) Why 50 years? Working-class formation and long economic cycles. *Science & Society* 55(4):417–445
- Lembcke J (1995) Labor history's "synthesis debate": Sociological interventions. *Science & Society* 59(2):137–173
- Luxemburg R (1972) *The Accumulation of Capital*. New York: Monthly Review Press
- Maddison A (1995) *Monitoring the World Economy 1820–1992*. Paris: Development Centre of the Organisation for Economic Cooperation and Development
- Marglin S A (1974) What do bosses do? The origins and functions of hierarchy in capitalist production. *Review of Radical Political Economics* 6(2):33–60
- Marx K (1977) *Capital*, vol 1. New York: Vintage
- Marx K and Engels F (1970) *The German Ideology*. New York: International
- Meyer D (1984) Emergence of the American manufacturing belt: An interpretation. *Journal of Historical Geography* 9(2):145–174
- Meyer III S (1982) *The Five-Dollar Day: Labor Management and Scientific Control in the Ford Motor Company, 1908–1922*. Albany: State University of New York Press
- Montgomery D (1979) *Workers' Control in America*. Cambridge, UK: Cambridge University Press
- Montgomery D (1980) Labor and the Republic in industrializing America: 1860–1920. *Le Mouvement Social* 111:201–215
- Montgomery D (1987) *The Fall of the House of Labor: The Workplace, the State, and American Labor Activism, 1865–1925*. Cambridge, UK: Cambridge University Press
- Moody K (1988) *An Injury to All*. New York: Verso
- Moody K (1997) *Workers in a Lean World*. New York: Verso
- Moore J W (2000) Environmental crises and the metabolic rift in world-historical perspective. *Organization & Environment* 13(2):123–158
- Mumford L (1938) *The Culture of Cities*. New York: Harcourt Brace Jovanovich
- Nelson D ([1975] 1995) *Managers and Workers: The Origins of the New Factory System in the United States, 1880–1920*. 2nd ed. Madison: University of Wisconsin Press
- North D C (1966) *The Economic Growth of the United States 1790–1860*. New York: W W Norton
- North D C, Anderson T L and Hill P J (1983) *Growth and Welfare in the American Past: A New Economic History*. 3rd ed. Englewood Cliffs, NJ: Prentice-Hall
- O'Connor J (1998) *Natural Causes*. New York: Guilford
- Page B and Walker R (1991) From settlement to Fordism: The agroindustrial revolution in the American Midwest. *Economic Geography* 67(4):281–315
- Parker M and Slaughter J (1988) *Choosing Sides: Unions and the Team Concept*. Detroit: Labor Notes
- Peet R (1987) The geography of class struggle and the relocation of United States manufacturing industry. In R Peet (ed) *International Capitalism and Industrial Restructuring: A Critical Analysis* (pp 40–71). Boston: Allen and Unwin
- Pietrykowski B (1995) Fordism at Ford: Spatial decentralization and labor segmentation at the Ford Motor Company, 1920–1950. *Economic Geography* 71:383–401
- Pletcher D M (1984) 1861–1898: Economic growth and diplomatic adjustment. In W H Becker and S F Wells Jr (eds) *Economics and World Power: An Assessment of American Diplomacy since 1789* (pp 119–172). New York: Columbia University Press
- Ponting C (1991) *A Green History of the World*. New York: St Martin's Press

- Post C (1995) The agrarian origins of US capitalism: The transformation of the Northern countryside before the Civil War. *Journal of Peasant Studies* 22(3 April):389–445
- Post C (1997) The “Agricultural Revolution” in the United States: The development of capitalism and the adoption of the reaper in the antebellum US North. *Science and Society* 61(2):216–228
- Potts L (1990) *The World Labour Market*. London: Zed Press
- Pudup M B (1987) From farm to factory: Structuring and location of the US farm machinery industry. *Economic Geography* 63(3):203–222
- Robbins W G (1994) *Colony and Empire: The Capitalist Transformation of the American West*. Lawrence: University Press of Kansas
- Robinson R V and Briggs C M (1991) The rise of factories in nineteenth-century Indianapolis. *American Journal of Sociology* 97(3):622–656
- Rubenstein J M (1992) *The Changing US Auto Industry: A Geographical Analysis*. London: Routledge
- Sayer A and Walker R A (1992) *The New Social Economy*. Cambridge, MA: Blackwell
- Schmitz C J (1993) *The Growth of Big Business in the United States and Western Europe, 1850–1939*. London: Macmillan
- Shannon F A (1957) *American Farmers Movements*. Princeton, NJ: D Van Nostrand Company
- Shannon F A ([1945] 1968) *The Farmers’ Last Frontier: Agriculture, 1860–1897*. New York: Harper and Row
- Shefter M (1986) Trade unions and political machines: The organization and disorganization of the American working class in the late nineteenth century. In I Katznelson and A Zolberg (eds) *Working-Class Formation* (pp 197–276). Princeton, NJ: Princeton University Press
- Silver B J (1997) Turning points of workers’ militancy in the world automobile industry, 1930s–1990s. *Research in the Sociology of Work* 6:43–71
- Smith N (2000) “New Globalism, New Urbanism: Uneven Development in the 21st Century.” Unpublished paper. Department of Anthropology, City University of New York
- Stalker P (1999) *Workers without Frontiers*. Boulder, CO: Lynne Rienner
- Storper M and Walker R (1989) *The Capitalist Imperative: Territory, Technology, and Industrial Growth*. Oxford: Basil Blackwell
- Swyngedouw E (1997) Neither local nor global: “Glocalization” and the politics of scale. In K Cox (ed) *Spaces of Globalization* (pp 137–165). New York: Guilford
- Thompson F M L (1968) The second agricultural revolution, 1815–1880. *Economic History Review* 21(1):62–77
- Trachtenberg A (1982) *The Incorporation of America: Culture and Society in the Gilded Age*. New York: Hill and Wang
- Tomich D (1990) *Slavery in the Circuit of Sugar: Martinique and the World-economy, 1830–1848*. Baltimore: Johns Hopkins University Press
- Vance J E (1988) Transportation and the geographical expression of capitalism. In E D Genovese and L Hochberg (eds) *Geographic Perspectives in History* (pp 119–143). Oxford: Basil Blackwell
- Walton J (1996) *Sociology and Critical Inquiry*. New York: Wadsworth
- Wallerstein I (1974) *The Modern World-System I*. New York: Academic Press
- Wallerstein I (1989) *The Modern World-System III*. San Diego: Academic Press
- Webb A D (1911) *The New Dictionary of Statistics*. London: George Routledge and Sons; New York: E P Dutton
- White R (1991) *“It’s Your Misfortune and None of My Own”: A New History of the American West*. Norman: University of Oklahoma Press
- Wilentz S (1984) Against exceptionalism: Class consciousness and the labor movement, 1790–1920. *International Labor and Working Class History* 26(Fall):1–24

- Wolf E R (1969) *Peasant Wars of the Twentieth Century*. New York: Harper and Row
- Wolf E R (1982) *Europe and the People without History*. Berkeley: University of California Press
- Woodruff W (1973) The emergence of an international economy. In C Cipolla (ed) *The Fontana Economic History of Europe: The Emergence of Industrial Societies, Part Two* (pp 656–737). New York: Collins/Fontana Books
- Zinn H (1980) *A People's History of the United States*. New York: Vintage