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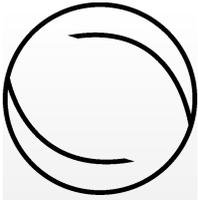
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# The Future of Critical Management Studies: A Paleo-Marxist Critique of Labour Process Theory

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## Abstract

For many years, the core of critical management studies was labour process theory (LPT), building on Braverman's (1976) reading of Marx. Recently, LPT has been losing momentum in favour of post-structuralist approaches. This paper takes one step back with the hope of taking critical management studies two steps forward. Whereas post-structuralists have largely discarded the Marxist foundations of LPT, this paper argues that LPT has been hobbled by its insufficiently Marxist foundations. I argue that LPT ignores the fundamental contradiction Marx saw between the progressive 'socialization' of the labour process and the persistence of capitalist 'valorization' constraints. Understood in Marx's terms, socialization is the movement away from local isolation towards 'universal interdependence', and it is a key trend both in the objective structure of industry and in subjective self-construals. I use this framework to develop a modified conception of skill, one that reveals how capitalist development drives a process of long-term skill upgrading. On this platform, I sketch a reinterpretation of two well-known cases of work reorganization — Taylorism and lean production. In both cases, useful insight is garnered by showing how the socialization of the labour process represented by these new management principles and the associated skill upgrading was simultaneously stimulated, retarded and distorted by valorization pressures.

**Keywords:** Marxism, labour process, critical management studies, socialization, Taylorism, lean production

To understand the organizational forms we observe around us, we need to understand the work practices that these forms are designed to support. As new organizational forms proliferate, work is therefore once again becoming a core concern of organizational research (Barley 1996; Barley and Kunda 2001). And as interest in work grows, so too does the corresponding theoretical challenge: how best can we apprehend the nature of work itself and its links to both organizational structure and to the lived experience of work?

Critical management studies has been a strong contender in this theoretical challenge. Within critical management studies, labour process theory (LPT) has provided a popular platform for analysing work and work organization (see Thompson 1989; Wardell et al. 1999; Thompson and Newsome 2004). Inaugurated by Braverman's 'classic' work (1974; classic according to Burawoy 1996), LPT highlights 'skill' as the key construct (as distinct from, e.g., satisfaction), identified two key dimensions of skill — complexity and autonomy — and then argues,

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claiming a grounding in Marxist theory, that powerful forces encourage managers in capitalist firms to try to reduce both complexity and autonomy so as to ensure lower costs and greater control.

Recently, however, LPT has been losing momentum, even within critical management studies, in favour of post-structuralist strands of theorizing, in which the inspiration comes more often from Nietzsche than Marx. I argue that one reason for LPT's loss of momentum has been its inability to deal with two discomforting anomalies. First, there is a growing consensus that capitalist development has been associated not with declining but with increasing work complexity. Second, while it is indeed likely that work autonomy has declined for most occupations, key parts of Marx's writings themselves suggest that this should more properly be seen as a progressive change.

I argue that LPT has been led into this impasse by a one-sided reading of Marx. This essay proposes an alternative, more dialectical reading of Marx that may help us better understand both increasing complexity and declining autonomy as progressive tendencies driven by the 'laws of development' of capitalism. Following Hobsbawm (1995), I call my reading 'paleo-Marxist'. The term 'paleo' is not meant to signal any pejorative connotation — on the contrary, I will argue that it is the more fruitful interpretation — but simply to signal both (a) a certain 'retro' quality to the simplicity of the associated theory and (b) the fact that this theory was common before World War I but was subsequently eclipsed by neo-Marxism, of which LPT is an exemplar.

The paper begins with a brief recapitulation of LPT. I then outline the case for increasing complexity and explain why declining autonomy might be seen as progressive. Following a presentation of the paleo reading of Marx, I illustrate the potential fruitfulness of this reading through brief sketches of Taylorism and lean production. A synthesis section suggests how this alternative view provides a platform for a powerful challenge to mainstream management studies on a number of fronts. A conclusion looks towards the future.

### **Labour Process Theory, Briefly**

Inspired by Marx, LPT proposes that the key to understanding work organization lies in the structure of the broader society within which it is embedded, rather than in human psychology or in the dynamics of dyadic interaction. Social structure, in turn, is seen as fundamentally determined by the prevailing relations of production — the nature of control and property rights over productive resources. The relations of production characteristic of capitalist societies derive from the nature of the commodity (the 'germ', or core, of capitalist production: Marx 1977: 163). The commodity is something produced for sale, and as such has two contradictory aspects: its use-value (its value as something useful to the purchaser) and its exchange-value (its power to command money in exchange). As a system of commodity production, capitalist relations of production have two main dimensions. First, ownership of productive resources is dispersed among firms which confront each other as commodity producers in market competition: call this the 'capital relation'. Second, alongside those who

enjoy such ownership is a class of non-owners who, lacking access to means of production, must sell their capacity to work ('labour power') as if it were a commodity on the labour market: call this the 'wage relation'.

These features of the capitalist social structure have strong implications for the organization of work. Notwithstanding important variations across industries, regions, periods and strategies, firms must reduce costs of production. Management responses include downward wage pressure, work simplification, intensification and reorganization, technological change, relocation, as well as efforts to develop collaborative relations with employees and related firms. These latter, collaborative efforts are constantly undermined by the exploitative nature of wage relation and the competitive nature of the capital relation.

Whereas more traditional readings of Marx — as indeed many non-Marxist theories — give a key role to technological change as a driver of social change and determinant of work organization, many labour process theorists, along with other social constructionists, have been adamantly opposed to 'technological determinism'. Marking it as distinctively 'neo' rather than traditional in its reading of Marx, LPT argues that attributing a basic causal role to technology would be to naturalize the socially constructed, historically specific, capitalist relations of production (e.g. Burawoy 1979: 14ff, 220). On the neo view, technology is itself shaped by these relations of production (Noble 1979).

The net result for work organization, according to LPT, is that:

'Control and cost reduction structure the division of labour, involving the design of work and the division of tasks and people to give the most effective control and profitability. This is sustained by hierarchical structures and the shaping of appropriate forms of science and technology.' (Thompson and McHugh 2002: 367)

Alongside these broad structural features of capitalist work organization, LPT acknowledges that empirically observed situations will also reflect a host of local factors specific to firms, markets, institutional contexts, the ideologies of the various actors and the history of their interrelations. Labour process theory does not deny the importance of these local factors, but argues that this variation is shaped by the deep structure of capitalist relations of production, and that our theories therefore should acknowledge the layered causality involved.

## **The Upgrading Challenge to Labour Process Theory**

From its inception, LPT has been critical of those who claim to see upgrading trends in work and the emergence of 'new paradigms' in work organization (e.g. Bell 1973; Touraine 1969; Piore and Sabel 1984; Kern and Schumann 1984; Mathews 1994). The first wave of LPT, based on the reading of Marx just summarized, argued that capitalist imperatives of control and cost reduction led inexorably to 'deskilling' — fragmenting jobs, reducing skill requirements and replacing worker autonomy with management control. Numerous studies compellingly described cases of deskilling in various occupations (e.g. Zimbalist 1979). Over the years, and confronted with conflicting examples and arguments, its proponents have nuanced their positions, retreating from the stronger deskilling position that claimed roots in Marx's ideas to a more eclectic set of propositions

less tied to Marxism (Thompson and Newsome 2004). LPT now entertains three main alternatives: deskilling, a polarization view where a minority of workers find their skills upgraded even as the majority are deskilled, and a contingency view where skill changes are dependent on the state of the class struggle on the shop floor and on the broader changes in macro socioeconomic structures.

Crucially, the only diagnosis excluded by contemporary LPT is that of a long-term upgrading trend. I argue below that the available data, viewed through the appropriate theoretical lenses, do in fact suggest such a trend. Moreover, I argue that this trend is consistent with Marx's theory. The following subsections present my evidence and argument, addressing in turn each of the two dimensions of skill identified by LPT, complexity and autonomy. (On these two as the basic dimensions of skill, see Spenner (1988), Form (1987), Attewell (1987) and Thompson (1989). Littler (1982) identifies a third dimension, the social construction of skill, which I treat as a superstructural overlay over the two basic dimensions.)

### **Anomaly 1: Complexity has Increased**

Skill is, first, a matter of the technical content of workers' tasks — their relationships to the objects of their work and to the tools they use. Technical content varies in many concrete ways: we can distinguish manual from cognitive, manufacturing from service, operational from learning, and so on. Moreover, the characterization of technical content is typically gendered: 'women's' tasks are often grossly undervalued. Abstracting from these concrete differences (as the hypothetical competitive market mechanism does in determining wage rates), complexity can arguably be reduced to a scalar measure, the socially necessary labour-time invested in the required education and training. (From this standpoint, human capital theory captures the visible surface of the underlying value relationship postulated by Marx's theory of complex labour.)

As concerns complexity understood in this way, not only are upgrading counter-examples common in the literature (e.g. Fernandez 2001), but there is a growing consensus on an upgrading trend in the overall evolution of work organization under capitalism over the last century (Form 1987; Attewell 1987; on more recent trends in the US, see Handel 2000; on Germany, Spitz n.d.; on the UK, Gallie et al. 2003). Consider, first, the evolution of the occupational distribution of the workforce. Table 1 shows data on the case of the US over the 20th century. There are, of course, many difficulties in interpreting these data; but it is hard not to see in this mutation of the occupational structure an important upgrading, notably in the massive contraction of the unskilled farm and non-farm labourer category, the more recent contraction of the operative category, and the growth of the professional and technical category. (We might note too that many people classified in the growing category of managers and administrators have very little managerial authority and arguably belong to the working class, broadly construed.) The fact that the corresponding industry structure has shifted dramatically, first from agriculture to manufacturing and then from manufacturing to service, does not change the upgrading diagnosis, since the debate concerns the labour force as a whole.

Table 1.  
Evolution of the  
US Occupational  
Structure

Year	1900 <sup>a</sup>	1970 <sup>a</sup>	2000 <sup>b</sup>
<i>Clerical</i>	0.03	0.18	0.16
<i>Professional, technical</i>	0.04	0.14	0.16
Service workers, excl. private household	0.04	0.11	
Private household workers	0.05	0.02	
<i>Total service, incl. private household</i>	0.10	0.13	0.14
<i>Salesworkers</i>	0.05	0.07	0.12
Operative and kindred	0.13	0.18	
Labourers, excl. farm and mine	0.13	0.05	
<i>Total operatives plus labourers (excl. farm)</i>	0.26	0.23	0.12
<i>Managers, administrative, proprietors</i>	0.06	0.08	0.11
<i>Craftsmen, foremen</i>	0.11	0.14	0.12
Farmers	0.20	0.02	
Farm labourers and foremen	0.18	0.01	
<i>Total farmers plus farm labourers</i>	0.38	0.03	0.04

<sup>a</sup>Source: US Bureau of the Census (1975)

<sup>b</sup> Author's imputation based on US Bureau of the Census (2000). Census data after 1970 combine operatives and labourers, do not distinguish private household workers, and do not distinguish farm, labourers from farmers and farm managers.

How do labour process theorists respond to data such as these? Braverman (1974: ch. 20) anticipated the most common responses. He suggested we simply ignore such occupational data, because (a) they do not recognize the experience-based skills of farmers and farm labourers; (b) commentators often inflate the skills of manufacturing operatives, classifying them as semi-skilled merely because they work with machinery, while classifying labourers as unskilled merely because they do not; (c) the data ignore the class difference between middle-class professional/technical categories and the working class narrowly construed; and (d) they mask the dilution over time of skills in the craft category.

While there is arguably some truth to all these objections, it nevertheless takes a huge effort of imagination to see the shift registered in these statistics as compatible with any aggregate trend other than upgrading. And where scholars have been able to use independent measures of skill such as the *Dictionary of Occupational Titles*, none has found evidence of aggregate deskilling nor polarization: a modest upgrading trend is the almost universal conclusion (see the comprehensive review of US studies by Spenner 1988; for more recent UK experience, see Gallie et al. 2003).

Second, consider the average education level of the workforce — arguably an important indicator of complexity: it, too, has increased dramatically. The fraction of US 17-year-olds who had completed high school grew from 6% in 1900, to 57% in 1950, to over 80% by the end of the century. Braverman (1974) suggests we ignore this evidence too, since (a) it reflects the demands of urbanization rather than industry; (b) it is biased by the inclusion of non-working-class categories; (c) school is a way to keep unemployed youths off the streets; and (d) many workers' education is underutilized.

Again, these points all have some validity; however, despite this huge increase in the supply of more-educated labour, high-school and college education has continued to yield a sizable positive economic return in the labour market (Goldin and Katz 1999), and this result is difficult to understand unless at least

some of this increase in education levels reflects increasing skill requirements rather than pure screening and credentialism (Abramowitz and David 1996). As Goldin and Katz write, the most plausible explanation for this pattern is that 'technological change and capital deepening have both served to increase the demand for more-skilled labour over the long run' (1999: 25–26). Consistent with this interpretation, a large number of cross-sectional studies have found that capital equipment investment levels and worker skill levels are complements rather than substitutes (Goldin and Katz 1998).

Faced with evidence such as this, it is not surprising that neo-Marxist LPT has retreated, away from broad trend generalizations towards a contingency view. Summarizing the contingency view, Smith and Thompson write:

'LPT is not dependent on deskilling or Taylorism as the characteristic form of the capitalist labor process. Its core theory merely recognizes that competitive relations compel capital to constantly revolutionize the labor process and that within that framework, capital and labor will contest the character and consequences of such changes.' (Smith and Thompson 1999: 211)

Compared to the deskilling argument, such a contingency view is easier to reconcile with the data just summarized; but it comes at the cost of abandoning the challenge of theorizing long-term skills trends. Moreover, theoretically, it is much closer to a Weberian view of an underdetermined rivalry of social categories than to LPT's ostensible Marxist grounding. It is one thing to argue that workers sometimes succeed in forcing management to upgrade jobs and in forcing government to provide greater access to education. But the idea that the balance of class power should be so favourable to workers over such large aggregates and over such a long period is difficult to reconcile with any theory that would characterize contemporary society as basically capitalist. If the data do show a long-term, aggregate upgrading trend, any theory that would claim a Marxist heritage must attribute primary causality to capitalist industry's need for skilled labour.

### **Anomaly 2: Declining Autonomy is Progressive**

Where the first dimension of skill is the mastery of technical relations to objects and tools, a second dimension should address the worker's mastery of the associated social relations. Concretely, we can distinguish various aspects of these social relations: relations that workers have with others in their immediate work unit, the horizontal coordination of this unit with other work units, and the vertical authority relations by which these activities are coordinated and controlled. (The technical and social dimensions of skill are of course related: as new work relations emerge, tasks and their complexity change, and vice versa. For example, new work relations often necessitate greater interactive and social skills.)

Abstracting from these concrete differences, these social dimensions are often reduced to, and measured by the yardstick of, autonomy. Autonomy is often seen as a positive value in work: Marxists argue that it affords workers more power in negotiating with employers, and some social psychologists argue that it is a *sine qua non* of intrinsic motivation and meaning.

There is little doubt that, over the last century, autonomy in work relations has declined for most of the labour force, if only because of the dramatic decline in the proportion of self-employed and in internal contracting, and the considerable increase in the average size of organizations. Moreover, there is little doubt that, within all but the smallest organizations, there has been considerable increase in the degree of specialization of roles and formalization of their coordination. Gallie et al. (2003) show that, over the last 15 years, average autonomy has further declined for the UK labour force.

However, viewed theoretically (and indeed politically), autonomy is, I submit, the wrong yardstick. It is backward-looking, reflecting nostalgic regret for the passing of the autonomous craftsman (or alternatively, reflecting the ideal of alienated, self-sufficient individualism that is the spontaneous ideology of market society). This yardstick may allow us to measure what often has been lost in the development of the capitalism; but to formulate an assessment, we surely also need a way to understand what has replaced that lost autonomy.

Autonomy is merely the converse of interdependence, and if we want to understand the changing nature of work relations and of skill more generally, we need a way to understand the changing forms of interdependence. Much work in LPT, starting with Braverman, has implicitly assumed that this interdependence, under capitalist conditions, can only be one of coercive dependence. (In this assumption, LPT is not very different from the humanist critique of bureaucracy advanced by neo-human relations writers such as Bennis (1993).) If that were the case, then autonomy might indeed be a useful yardstick. In reality, however, interdependence can take either coercive or collaborative forms, and we therefore need a theory of skill that can help us understand these forms and the relations between them.

I submit that Marx's theory of the socialization of production provides us with a strong theoretical foundation for this task. But in order to make this argument, I first need to explain my paleo reading of Marx.

## Reading Marx

LPT, like other theories that take inspiration from Marx, takes as its starting point the proposition that:

'the development of the contradictions of a given historical form of production is the only historical way in which it can be dissolved and then reconstructed on a new basis.' (Marx 1977: 619)

The term 'contradiction' is here used in a Hegelian sense, to designate a complex type of relation between real forces rather than merely between a logical incompatibility between propositions. For LPT and other neo-Marxists, class struggle is the motor of history, and the development of the contradictions of capitalism consists of intensified worker struggles in reaction to exacerbated exploitation and misery. The more traditional reading of Marx — the paleo-Marxist view — sees the basic contradiction at a deeper layer of causality, in the relation between the forces and the relations of production. The forces of production are composed of technology in the form of instruments, materials

and workers' productive faculties; the relations of production, as discussed above, are the relations of ownership and control over the productive forces.

The paleo-Marxist reading accepts all of the elements of LPT laid out in the earlier exposition, with the exception of the dismissal of technology as an important causal factor; as a result, it comes to a very different conclusion regarding the vector of change in skill and work organization.<sup>1</sup> On the paleo view, the long-term path of development of the class struggle is itself determined by the progressive intensification of the underlying contradiction between the 'socialization' tendency of the forces of production and the persistence of private-property-based relations of production (Engels 1978).

### **Socialization, Objective**

Marx's concept of socialization was expansive. In more recent Marxist writings as in political science more generally, socialization usually refers to the transfer of ownership from the private to the public sphere. In psychology, socialization is commonly construed as the process whereby people new to a culture internalize its knowledge, norms and values. Marx's use was broader than either and encompasses both. Marx's discussion of the socialization of the forces of production (e.g. Marx 1973: 705; 1977: 1024) suggests that both public ownership and psychological internalization are merely forms of a more general phenomenon: activity is socialized insofar as it comes to embody the capabilities of the larger society rather than only those that emerge from isolated, local contexts:

'The social productive forces of labour, or the productive forces of directly social, socialized (i.e. collective) labour come into being through cooperation, division of labour within the workshop, the use of machinery, and in general, the transformation of production by the conscious use of the sciences, of mechanics, chemistry, etc. for specific ends, technology, etc. and similarly, through the enormous increase of scale corresponding to such developments (for it is only socialized labour that is capable of applying the general products of human development, such as mathematics, to the immediate process of production; and conversely, progress in these sciences presupposes a certain level of material production).' (Marx 1977: 1024)

Marx's concept of the socialization of the forces of production embraces both the objective components of these forces (material means of production) and their subjective components (human capabilities). Objective socialization is reflected in Durkheim's concept of the 'organic' division of labour: production is socialized when increasingly differentiated, specialized branches of activity are conjoined in an increasingly interdependent whole. This type of socialization is visible at first in only an indirect form, as the specialization of industries and regions and their increasing global interdependence in the world market (Van der Pijl 1998; Sohn-Rethel 1978; Engels 1978). Even when this interdependence is coordinated by the invisible hand of the market rather than by conscious planning, society's productivity is increased by the development of specialized materials, equipment and know-how, and by the ability to access and integrate these capabilities on an increasingly global scale.

At the enterprise level — where society's forces of production are instantiated as specific labour processes — objective socialization becomes more direct. Engels characterized it in these terms:

‘Before capitalist production, i.e. in the Middle Ages ... the instruments of labor — land, agricultural implements, the workshop, the tool — were the instruments of labor of single individuals, adapted for the use of one worker ... [The bourgeoisie transformed these productive forces] from means of production of the individual into *social* means of production, workable only by a collectivity of men. The spinning-wheel, the hand-loom, the blacksmith’s hammer were replaced by the spinning-machine, the power-loom, the steam-hammer; the individual workshop, by the factory, implying the cooperation of hundreds and thousands of workmen. In like manner, production itself changed from a series of individual into a series of social acts.’ Engels (1978: 702)

Under these objectively socialized conditions, the effective subject of production is no longer an individual worker but the ‘collective worker’ (Marx 1977: 464, 468–469, 483, 544, 644, 945; Gramsci 1971: 201). Firms develop a whole panoply of management techniques to master what Marx calls the ‘cooperation’ necessary to coordinate this interdependent ‘series of social acts’ undertaken by the collective worker (see Marx 1977: ch. 13). In this light, techniques of work organization (such as the principles of bureaucracy, Taylorism, or lean production) are part of the forces of production. The development of such principles — organizational technology — is part of the socialization process, representing a step towards more rational, conscious planning and management of large-scale, interdependent operations.

### **Socialization, Subjective**

To these ‘objective’ dimensions of socialization corresponds a subjective dimension (to reprise the psychological meaning of socialization). When the effective subject of production is no longer an individual worker but the ‘collective worker’, workers’ identities change — they are resocialized. Recall that in Marx’s view human nature is nothing but ‘the ensemble of the social relations’ (Marx 1975: 423). Socialization in this subjective sense can be understood as the emergence of more ‘interdependent self-construals’ (Markus and Kitayama 1991). The civilizing mission of capitalism is not only to stimulate enormously the quantitative development of the objective components of the forces of production, but also to take a decisive step in the realization of humankind’s fundamentally social nature:

‘When the worker cooperates in a planned way with others, he strips off the fetters of his individuality, and develops the capabilities of his species.’ (Marx 1977: 447)

The *Communist Manifesto* is eloquent on this interweaving of objective and subjective aspects of socialization:

‘The bourgeoisie, historically, has played a most revolutionary part. The bourgeoisie, wherever it has got the upper hand, has put an end to all feudal, patriarchal, idyllic relations ... In place of the old local and national seclusion and self-sufficiency, we have intercourse in every direction, universal interdependence ... And as in material, so in intellectual production. The intellectual creations of individual nations become common property. National one-sidedness and narrow-mindedness become more and more impossible ... The bourgeoisie ... has rescued a considerable part of the population from the idiocy of rural life ... The bourgeoisie cannot exist without constantly revolutionizing the instruments of production ... With the development of industry, the proletariat not only increases in numbers; it becomes more concentrated in greater masses, its strength grows, and it feels that strength more ... Thereupon the workers begin to form

combinations (trade unions) ... The union is helped on by the improved means of communication that are created by modern industry and that place the workers of different localities in contact with one another ... 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 ... What the bourgeoisie, therefore, produces, above all, is its gravediggers.' (Marx and Engels 1959: 9–20)

The development of the forces of production thus pulls workers out of what Marx and Engels call here 'rural idiocy'. In *The Poverty of Philosophy* (1955), Marx similarly celebrates the end of 'craft idiocy'. Marx's use of the term 'idiocy' preserves both its colloquial sense and the meaning from the Greek *idiotes*, denoting an asocial individual isolated from the polis. At the opposite end of the spectrum from the *idiotes* is the 'social individual' described by the *Grundrisse*, in the form of the technically sophisticated worker who accesses and deploys society's accumulated scientific and technological knowledge:

'to the degree that large industry develops ... it is neither the direct human labor he himself performs, nor the time during which he works, but rather the appropriation of his own general productive power, his understanding of nature and his mastery over it by virtue of his presence as a social body — it is, in a word, the development of the social individual which appears as the great foundation-stone of production and of wealth.' (Marx 1973: 704–706)

Cohen (1974) provides a compelling gloss of Marx's (1973: 158) analysis of this historical evolution of subjectivity. In pre-capitalist forms of society, the individual is 'engulfed' by social structures that afford only 'undifferentiated unity': interpersonal relations are primarily conditioned by social status rather than individual choice. Under capitalism, the individual emerges, but only in the 'alienated' form of 'differentiated disunity': social structures afford individual differentiation, but at the cost of the dissolution of traditional communities. In a post-capitalist society, individual differentiation will truly flourish, because it will be part of a social structure that affords 'differentiated unity': individuals will play differentiated roles, but they will be mobile between these roles and they will collectively govern their common destiny. They will be neither (engulfed) dependent nor (alienated) independent but genuinely interdependent.

In this account, however, Cohen does not address the evolution of subjectivity *within* the capitalist epoch. On the paleo reading of Marx, the development of capitalism engenders a shift towards subjective interdependence, as seen in the growing 'association' of workers referred to in the last-but-one extract (Marx and Engels 1959: 9–20). The new emerges within the womb of the old, on both the objective and subjective planes.

### The Socialization of Skill

This reading of Marx leads to strong predictions concerning skill trends under capitalism. First, concerning complexity in the technical dimension, the emergence of the 'social individual' — limited though this emergence may be under capitalist conditions — means that each worker internalizes a richer world of knowledge. Marx thus writes:

'Large-scale industry ... makes the recognition of variation of labour and hence fitness of the worker for the maximum number of different kinds of labour into a question of

life and death ... the partially developed individual, who is merely the bearer of one specialized social function, must be replaced by the totally developed individual, for whom the different social functions are different modes of activity he takes up in turn. One aspect of this process of transformation, which has developed spontaneously from the foundation provided by large-scale industry, is the establishment of technical and agricultural schools. Another is the foundation of “*écoles d’enseignement professionnel*”.’ (Marx 1977: 618–619)

Second, concerning the social dimension of skill, workers are drawn out of craft and rural idiocy into an interdependent collective worker, stripping away the ‘fettters’ of their individuality, internalizing new identities and self-construals that fit the interdependent nature of work and the new forms of class struggle.

The form of skill is transformed in this process: it is socialized. In its pre-capitalist form, skill was largely tacit; working knowledge was deeply local; it was learned in intimate apprenticeship; and this apprenticeship led to an autonomous farmer or artisan. Under advanced capitalist conditions, skill means the internalization of a much larger universe of accumulated knowledge. Sceptics need only compare the elementary and secondary school textbooks of today with those of 50 or 100 years ago. This knowledge has become far more explicit and less exclusively tacit, and this has in turn greatly accelerated knowledge growth. The technical dimension of skill thus both expands and changes in form. And in its social dimension, skill now means mastery of one’s role in a considerably broader and more complex structure of interdependent cooperation.<sup>2</sup> Autonomy is a singularly unhelpful criterion of this mastery.

It is true that the increasing complexity of society’s knowledge is embodied not only in the worker but also in equipment. Moreover, as we will see in the following section, under capitalist conditions, this equipment stands over the worker as an alien power, threatening deskilling and coercive control. Nevertheless, numerous studies have found that capital (as conventionally defined) and skills (as complexity) are complements, not substitutes (Goldin and Katz 1998). And this is to be expected: it is, after all, in general the simpler, less-complex skills that are the most easily, and thus the first, automated, leaving the worker with a task set that is on average more complex. Computerization has done little to change this basic pattern (Autor, Levy, and Murnane, 2001).

Similarly, work relations are coordinated not only by workers themselves, but also by management bureaucracy and by market relations. And these often appear, like technology itself, as alien coercive powers over worker. Nevertheless, here too, productivity and quality — the ability of the capitalist firm to produce desired use-values — demand that workers themselves actively participate at least to some extent in this coordination. Like equipment and skill, bureaucratic structuring and the cohesion of the collective worker are more often complements than substitutes.

### **Socialization vs Valorization**

The theory of historical materialism as developed by Marx and Engels embeds this simultaneously structural and psychological concept of socialization in a sweeping interpretation of the development of capitalism — an interpretation that

can help us understand the forces governing the diffusion of new technologies, new organizational forms, and the associated psychological changes.

Under capitalism, the socialization of the forces of production is simultaneously stimulated, retarded and distorted by the prevailing relations of production. These capitalist relations of production impose on firms the imperative to 'valorize' invested capital — to ensure that its value expands over time — and this imperative both drives firms to further socialize production and inhibits and distorts that socialization process. To elaborate: recall that for Marx, the *production process* under capitalism has two contradictory aspects reflecting the two aspects of the commodity form discussed above. On the one hand, it is a *labour process*, in which use-values in the form of work, tools and materials are combined to create new use-values. On the other hand, and simultaneously, it is a *valorization process* in which these use-values appear in the form of exchange-values — monetary wages and capital investment — that are combined to create profit (see Marx 1977: appendix; Thompson 1989; Bottomore 1983: 267–270). Work organization and its different forms reflect this contradictory structure: they are simultaneously part of the productive forces (as techniques for organizing cooperation in the labour process) and part of the relations of production (as means of coercing effort to valorize invested capital).

Valorization pressures drive the socialization of production by forcing firms to develop and implement new technologies and techniques, to break down parochial market barriers, and thus to integrate production, distribution, exchange and communication networks on a global scale. However, under capitalist relations of production, these effects take a distinctive, alienated form: instead of a broadening association of producers progressively mastering their collective future, this interdependence appears, at least at first, in the form of intensified coercion by quasi-natural laws of the market over firms and by corporate bureaucracy over workers. Valorization pressures stimulate the progressive socialization of the labour process; but under capitalist conditions, the substance of socialization takes on a form that is exploitative and alienating. Marx writes:

'This entire development of the productive forces of *socialized labour* (in contrast to the more or less isolated labour of individuals), and together with it the *use of science* (the general product of social development), in the *immediate process of production*, takes the form of the *productive power of capital*. It does not appear as the productive power of labour ... The social character of his labour confronts the worker as something not merely alien, but hostile and antagonistic, when it appears before him objectified and personified as capital.' (Marx 1977: 1024–1025)

The 'substance' of socialization is thus in contradiction with the 'form' it takes under capitalist conditions. This contradiction, however, is a 'real' one: as with the two facets of the commodity, both the substance and the form are equally real. And their contradiction evolves and intensifies over time because the pursuit of competitive advantage makes capitalists the 'involuntary promoters' of socialization (Marx and Engels 1959: 19) even as the basic matrix of capitalist relations of production remains in place.

Valorization pressures encourage socialization in three main domains. First, objective socialization is powerfully stimulated as valorization pressures force

firms to expand their factor and product markets: the resulting globalization of investment, trade and migration flows brings the world into closer, denser interdependence. Relatedly, in the objective structures of work organization, valorization pressures pit firms against each other in competitive rivalry; this rivalry results in concentration (growing firm size); and the growing size of firms broadens the scope of direct objective socialization in the form of conscious planning. Simple managerial control is increasingly replaced by bureaucratic control to coordinate production activities that are larger in scale and denser in interdependence. The coercive forms of bureaucracy that initially emerged were brittle, both technically and socially; they both stimulated and facilitated workers' association; internal labour markets emerge; new forms of worker voice proliferate. Over time, firms under valorization pressure seek more productive forms of organization of the collective worker, and enabling forms of bureaucracy begin to displace coercive forms, even though this tendency remains constrained and distorted by valorization imperatives (Adler 2006; Adler and Borys 1996).

Second, valorization pressures encourage subjective socialization. Valorization pressures and the resulting objective socialization bring workers together in ever-larger concentrations, where they learn new habits of disciplined, large-scale cooperation. The exchange-value aspect of production drives management to focus on reducing labour costs and increasing control; but the use-value aspect requires a collective worker capable of assuring production quality and continuity, capable of operating progressively more sophisticated equipment. The shift from handicraft and manufacture to large-scale industry and automation creates the need for technical-scientific training and for greater ideational flexibility on the job (Kohn and Schooler 1983; Inkeles and Smith 1974). While valorization pressures encourages firms to deskilling work by replacing expensive skilled workers with less-expensive specialized workers, these same valorization pressures also encourage firms to seek benefits from automation, and this automation, in the longer term, allows machinery to take over the simpler, less-skilled tasks more easily and more profitably than the more-complex, more-skilled tasks. We thus observe a long-term trend towards skill upgrading alongside abundant cases of deskilling. These cases of deskilling should not be ignored as mere 'noise' in the data: they reflect the deep structure of capitalist relations of production. It is therefore appropriate that scholars should highlight and critique them as reflecting an important, albeit secondary, tendency of capitalism.

Third, this progressive socialization of the objective and subjective forces of production stimulates steps (albeit timid and constrained by the overall societal dominance of private capital) towards the socialization of capitalist relations of production. This takes two forms. First, to reprise the political-science meaning of socialization, the state takes over a growing mass of 'general interest' tasks, that is, tasks in which the market tends to fail, such as infrastructure, unemployment and health insurance for workers, education and the funding of general purpose R&D. Second, within the business sector, ownership and control of productive resources and investment funds is progressively centralized in the hands of fewer capitalists; ownership shifts from individual to corporate form; and these corporations begin to coordinate, sometimes illicitly in cartels,

sometimes legally under regulated conditions, and increasingly often in alliances, supply-chain partnerships and industry-wide standard-setting associations. In these ways, both the wage relation and the capital relation are partially socialized, and growing areas of the economy find themselves under planful, conscious control rather than coordinated by the blind mechanism of the market. Even if the ultimate criterion is still typically profits rather than social utility, these represent steps towards socialization: they represent the 'creeping socialism' that Hayek (1944) denounced.

These socialization trends stand in ever-sharper contradiction to the predominant capitalist relations of production. The anarchy of the market and its concomitant boom and bust cycles were once presented as a modest price to pay for the dynamism of an entrepreneur-based economy; but as industry becomes more capital-intensive and more globally integrated, this anarchy becomes increasingly costly and its legitimacy is increasingly vulnerable to challenge. The growing weight of the state legitimates the idea of public control over an ever-expanding range of decisions; the growing centralization and concentration of industry encourage political movements demanding corporate social accountability; and an increasingly sophisticated working class is less likely to defer to management or government authority, whether autocratic or paternalistic (on the last of these, see Pateman (1970) for related theory, and Sobel (1993), Torbet (1973), Schur (2003) and Schlozman et al. (1999) for some supporting evidence). Socialization begins to extend from the 'base' of forces and relations of production, to the institutional 'superstructure' of culture, politics and law. Intellectual property law, for example, confronts ever more directly the fundamental contradiction that it attempts to arbitrate, and proposals for radical change (such as 'copyleft'; see Stallman 2003) proliferate. As Schumpeter wrote, 'things and souls are transformed in such a way as to become increasingly amenable to the socialist form of life' (1976: 162).

Marx warns us against oversimplifying this evolutionary path: we cannot ignore the limitations and distortions that reflect the effects of the persistent capitalist relations of production on the process of socialization. Take first the effects of the capital relation. Competition stimulates the advance of the forces of production; but it sometimes obliges firms to sacrifice long-term for short-term gains, and it systematically obliges them to privilege owners' private benefits over broader social benefits and costs. Competition stimulates moves towards inter-firm collaboration; but it simultaneously undermines such partnership by opportunistic rivalry (see, e.g., Whitford 2005). The marks of the wage relation are equally deep. As owners' agents, managers sometimes find it profitable to upgrade workers' skills; but sometimes they find it more profitable, if only in the short term, to deskill work, to manipulate teamwork so as to create peer pressure, to let horizontal specialization degenerate into adversarial rivalry, and to use hierarchy for coercive command and control. The limitation imposed by the wage relation is visible in the Sisyphean nature of corporate human resource management strategies — condemned to futility by the need for workers who are simultaneously dependable and disposable (Hyman 1987). The globalization of the market opens workers in more-developed countries to the threat of deskilling and unemployment by outsourcing, even if this same

process leads to skill upgrading and employment growth in the less-developed countries and forges real ties between workers across the globe. More generally, the socialization/valorization dialectic unfolds differently in the different varieties of capitalism: different forms of capitalism can exacerbate or moderate this basic contradiction, but cannot eliminate it.

Marx notes that ‘Every development in the means of new productive forces is at the same time a weapon against the workers’ (1847). However, goaded by valorization pressure in the continuing search for more effective organizing principles, more effective, more enabling forms of organization progressively emerge, partly displacing and partly coexisting with the coercive forms. This pattern — coercive forms emerge first, enabling ones later — illustrates another of Marx’s generalizations, ‘It is the bad side that produces the movement which makes history’ (Marx 1955: ch. 2). Driven by these contradictory forces, socialization progresses, but in a halting and uneven manner.

### The Paleo Reading Compared

Not only has Marx’s socialization/valorization dialectic not received much attention in organizational research; it has not figured prominently in any area of recent Marxist research. A search of the compendium of Marxist writings on the Marxists Internet Archive (<http://www.marxists.org/index.htm>) and via journal search engines reveals that when the term ‘socialization’ appears in Marxist discourse, it has been used almost exclusively in the political sense, to refer to nationalizations and similar partial steps towards socialization in the relations of production. Very little has been written about the broader process delineated by Marx (for one exception, see Mandel 1968: 170 ff.), and virtually nothing about this phenomenon at the enterprise level nor about the subjective aspects that so impressed Marx. (The Italian writers in the anarchist ‘autonomist’ tendency such as Negri (1989) have perhaps been the most active in using Marx’s ideas of subjective socialization; but their appropriation of Marx is highly selective.)

In analysing the evolution of skill and work organization, neo-Marxist LPT has thus truncated Marx’s dialectic. I am concerned by three forms of truncation. First, LPT truncates Marx’s characterization of the contradiction between the *labour process* and the *valorization process*. Marx writes:

‘If capitalist direction [of work] is thus twofold in content, owing to the twofold nature of the process of production which has to be directed — on the one hand a social labor process for the creation of a product, and on the other hand capital’s process of valorization — in form it is purely despotic.’ (Marx 1977: 450)

Paleo-Marxists read this and recall that in Marx’s Hegelian discourse, content and form can be in contradiction with each other. The paleo reading of this passage thus highlights the growing contradiction between an increasingly socialized labour process (the content) and the barriers posed to further socialization by the persistence of valorization constraints (the form).

Neo-Marxist LPT, by contrast, interprets this passage to mean that the historical development of capitalist work organization reflects above all the balance of class forces (despotism versus resistance) in the struggle over the

intensity of the working day. LPT often portrays this focus on labour intensity as evidence of its Marxist inspiration; however, a paleo reading reveals that this focus dissolves Marxist theory into a Weberian struggle for domination, obscuring the historical specificity of capitalist production. LPT ignores Marx's labour theory of value, and specifically Marx's fundamental insight that once capitalism as a system dispossesses workers of means of production and consumption, workers are forced to sell their labour power as if it were a commodity; this means in turn that, under normal conditions, workers receive a wage that fairly compensates them for the cost of reproducing this labour power; it is workers' double dispossession that allows the capitalist, just as fairly, to appropriate the surplus created when workers function at a historically-given normal intensity. The outcome of the struggle over work intensity is thus largely preordained by the macro structure of capitalism: the efforts of individual capitalists to increase work intensity and of workers to reduce it are certainly real; but they are secondary to this fundamental structural effect. It is this structure that explains the genesis and dynamics of the recurrent crises in capitalism: in abandoning the labour theory of value, LPT greatly inflates the significance of the struggle over work intensity, and loses the thread that connects labour and valorization processes within the firm to broader structural problems of accumulation and crisis (Rowlinson and Hassard 2001; Mohan and Rowlinson 2006).

Second, LPT reads Marx's discussion of capitalism's evolution from the *formal* to the *real subsumption of labour to capital* (Marx 1977: appendix) to mean that capitalist development leads to the increasing conformity of the labour process to the imperatives of valorization, whence an inexorable tendency to deskilling. In contrast, on the paleo view, real subsumption does not mean ever-more-perfect mastery by capitalists nor the tendential elimination of the basic labour-process/valorization-process contradiction within production, but rather the deepening, the intensification of the contradiction between the coordinative efforts of collective worker and the fragmenting effects of capitalist relations of production.

Finally, when Marx and Engels write in the *Communist Manifesto* that capitalism develops its own 'gravediggers', neo-Marxist LPT takes this to mean that capitalism creates a class with so little left to lose that it has no alternative but to revolt. They quote the rhetoric of the *Manifesto*, that workers have nothing to lose but their chains. On the paleo-Marxist view, the course of development of the class struggle itself is fundamentally determined by the structural contradiction between the forces and relations of production, and the development of capitalism is therefore more profoundly shaped by the progressive socialization of the forces of production. Over the long run, the overall effect is to create a working class that is increasingly educated, cognitively sophisticated, experienced in large-scale collaborative enterprise — and thus increasingly capable of successfully taking on the task of radically transforming society and of assuming the leading role in a new form of society. This task is made progressively easier by the modest steps towards socialization of relations of production even within the womb of capitalism itself (as discussed above). (Whether workers are *motivated* to undertake this historic, revolutionary mission — as distinct from being *capable* of undertaking it — depends on distinct, sociopolitical, superstructural factors.) The paleo-Marxist view takes as fundamental Marx's thesis that:

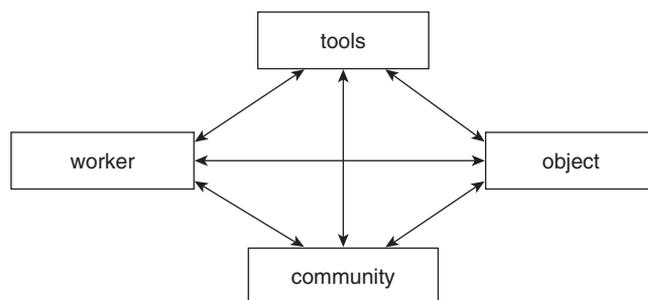
‘If we did not find concealed in society as it is the material conditions of production and the corresponding relations of exchange prerequisite for a classless society, then all attempts to explode it would be quixotic.’ (Marx 1973: 159)

My argument is that these paleo-Marxist lenses are useful for studying work and its history because they enable us to grasp the significance of a real but uneven trend of skill upgrading — greater complexity and greater interdependence — as a reflection of the deepest contradictions of capitalism. This viewpoint allows us to grasp the contradictions that beset capitalist management, and to grasp them in a surprisingly intuitive way: on the one hand, management needs and cultivates the productive power of the collective worker; on the other, management limits this development due to pressures of corporate profitability; and over the long term, the former dominates the latter, progressively intensifying the fundamental contradiction, and thereby opening prospects for change.

## A Framework

To deploy this paleo-Marxist approach, we need a more fine-grained account of the production process. Engström’s ‘activity theory’ provides a useful framework (see Engström 1987, 1990, and discussion by Blackler 1993; Holt and Morris 1993). The main elements of the labour process are, according to Marx, ‘(1) purposeful activity, that is work itself, (2) the object on which that work is performed, and (3) the instruments of that work’ (Marx 1977: 2184). Like Cohen (1978: ch. 3), I take the first element to refer more specifically to the worker’s productive capabilities. I also make one further amendment by differentiating a fourth element: the community within which the worker works and which shares the object of that work (inspired by Marx 1973: 471ff.; Leont’ev 1978). The resulting model is summarized in Figure 1.

Figure 1.  
The Structure of the  
Labour Process



Some comments will help situate this model. Taking as a baseline the more common schema in psychology, in which object and subject appear alone as stimulus and response, note, first, that for Marx, human activity is tool-mediated activity — where tools include both material tools such as hammers and symbolic ones such as language and concepts (Vygotsky 1962, 1978). Second, the appropriate unit of analysis for the study of work is not the quasi-automatic reflex *operation* of the individual, nor discrete, goal-oriented, individual *action*,

but rather *activity* understood as historically situated, object-oriented, collective endeavour. In collective activity, the subject's relation to the object is mediated not only by tools but also by community (Leont'ev 1978). Third, in Marx's analysis, the 'object' of work (in German: *Gegenstand*) includes both of the dictionary senses: the material on which the work is performed (in German: *Objekt*) and the intended goal of the activity. With this notion, Marx attempts to overcome both simplistic materialism (which accords insufficient place to intentionality in shaping the object) and classical idealism (which accords insufficient recognition to the obdurate nature of the object's materiality) (Marx 1959: 243; Engeström 1987; Foot 2002).

Figure 1 is a model of what Marx calls 'production in general' (Marx 1973: 85): it is trans-historical insofar as it does not acknowledge any more specific, historically bounded, 'concrete' determinations. We move from this abstraction towards the concrete by overlaying on this model a set of determinations that mark production as specifically capitalist. Of these, the most fundamental is the contradiction between use-value and exchange-value of which the commodity is the germ. This contradiction is reflected in each of the elements of the labour process. The object of work is both the creation of useful things (use-values) and the generation of profit (exchange-value). Tools and community are both means of technical accomplishment and means of extracting surplus labour from potentially recalcitrant workers. The worker is simultaneously a creative member of the collective worker and a disposable, variable-cost, budget item under another's control. More generally, viewed as use-value, each element participates in the socialization process; viewed as exchange-value, each is subordinate to the valorization process's profit imperative. In the neo-Marxist view, these contradictions are only virtual, since the use-value content disappears behind its exchange-value form; but in the paleo view, these contradictions between content and form are real, driving the evolution of work organization. The following two sections illustrate the potential fruitfulness of theorizing work organization through such lenses.

### Case 1: Taylorism and Scientific Management

Taylorism and the broader scientific management movement to which it was central are depicted in much LPT as an offensive in the class struggle — essentially, an effort to reduce the cost of, and assert greater managerial control over, craft workers (Braverman 1974; also Kanigel 1997). The paleo view acknowledges this reality, but identifies a second aspect as more fundamental: Taylorism was also a progressive step in the socialization of the forces of production, both objective and subjective (Sohn-Rethel 1978; and rereading Nelson 1980, 1992; Kelly 1982).

First, we should take some distance from the polemical characterizations of Taylorism commonly found in both critical LPT accounts and mainstream organizational texts. The most authoritative assessment is that formulated by labour historian Daniel Nelson, based on a thorough analysis of the records of every firm in which Taylor or his associates introduced scientific management:

‘Several conclusions about the impact of scientific management on factory work seem warranted: (1) First-line supervisors lost much of their authority to higher-level managers and their staffs. (2) The proportion of the work day devoted to production increased due to the elimination of delays. (3) Fewer decisions depended on personal judgments, biases, and subjective evaluations. (4) The individual worker exercised less discretion, particularly in plants where time studies were used to schedule production and/or set piece rates; in the small minority of plants where individual instruction cards were also used, the area of discretion was reduced even more. (5) In most cases earnings rose, but there were enough exceptions to blur the effect. (6) The level of skill required in production did not change as a result of scientific management though the most highly skilled employees, like the foremen, lost some of their de facto managerial functions. (7) Some unskilled jobs disappeared as improved scheduling and routing reduced the need for gangs of laborers and encouraged the introduction of materials handling machinery. (8) The “great fear” of skill and job loss that David Montgomery has documented among craft workers in the early 1910s quickly waned.’ (Nelson 1992: 13–14)

With this as backdrop, let us characterize Taylorism in terms of the conceptual framework proposed above.

### Tools

Commentators have often missed the significance of Taylor’s discovery of high-speed steel. This discovery demonstrated the superiority of systematic analysis over more traditional, craft-based trajectories of technical change. Whereas the latter anchored innovation on the shop floor and allowed exploration only in the immediate vicinity of existing techniques, Taylor demonstrated that a deeper division of labour would allow specialists to explore innovation opportunities further from the frontiers of current practice. High-speed steel was so radically different from prior forms that craft-based ‘local’ experimentation would have had a very low probability of ever stumbling upon it. With a disciplined approach to such exploration, technical progress — improvements like the sevenfold productivity allowed by high-speed steel — could be considerably accelerated. Along with high-speed steel, the results included slide-rules showing the optimal feeds and speeds of machine tools, and scientific designs for even such mundane tools as shovels.

Time and motion analysis techniques represented similarly socialized tools. The determination of work methods and standards was no longer only a function of isolated, local struggles between workers and their bosses: it was informed by a body of socialized knowledge, Taylor’s ‘science’ of work. In reality, this science took the form of a largely inductive and empirical ‘engineering’, often subject to management bias; but even in this form, the ‘mysteries’ of craft work were dissolved and knowledge of the labour process was socialized. This is the kind of advance that Marx was referring to in this well-known passage:

‘Right down to the eighteenth century, the different trades were called ‘mysteries’ (mystères), into whose secrets none but those initiated into their profession and their practical experience could penetrate. Large-scale industry tore aside the veil that concealed from men their own social process of production ... The varied, apparently unconnected and petrified forms of the social production process were now dissolved into conscious and planned applications of natural science.’ (Marx 1977: 616–617)

Workers contesting pay rates or workloads could, and often did, refer to this body of knowledge — challenging if necessary its biases — to buttress their bargaining power with the legitimacy of reason.

**Object**

Under scientific management, the object of work expanded in a socialized direction. Workers' tasks expanded from ensuring production at their own workstations to include more deliberate coordination with others, in the form of more rigorous planning of the flow of materials and tooling through the plant. The worker's activity expanded to include more systematic, planned performance-improvement efforts. Workers were thereby brought into daily contact with the world of science and engineering and found their horizons thus broadened. (Progressive Taylorites such as Morris L. Cooke even sought to broaden the object of scientific management to city and national economic planning: see Nyland 1988, Schachter 1989.)

**Community**

The 19th-century workshop was often a chaotic assemblage of independent contractors. Scientific management replaced the anarchy of the traditional job shop with planning disciplines appropriate to larger-scale enterprise. The planning department helped ensure an efficient flow of materials through more-tightly interdependent operations. Alongside the planning staff, several categories of 'functional foreman' were created. These roles were subsequently transformed into distinct support and staff functions, expanding technical occupations that are also part of the working-class broadly construed. Overall, the 'collective worker' was broadened by the development of a more differentiated and integrated division of labour (see Marx (1972: 179) and Engels (1870) on the importance of staff functions to the effectiveness of the Prussian military).

**Workers**

Taylorism rarely eliminated any but the least-skilled labourer jobs. It created new jobs in staff planning roles, often filled by skilled workers promoted from the shop floor. It inaugurated the scientific selection and training of workers. Workers' capabilities were no longer developed under the aegis of parochial tradition and craft apprenticeship. In undermining craft autonomy, Taylorism opens the way for industrial, rather than craft unionism, and correspondingly broader class solidarity and organization.

Neo-Marxist LPT theory is correct to insist that this transformation happened under despotic, capitalist authority. The resulting socialization was therefore one-sided and distorted. But it was no less real. On the one hand, capitalists sometimes used Taylorism against workers, resulting in loss of autonomy to remote planning departments, some job losses, the creation of some very repetitive, short-cycle jobs and a disruption of traditional craft bases of working-class resistance. On the other hand, Taylorism had profoundly progressive effects on the management of large-scale production, with important positive effects for workers: higher productivity facilitating higher wages, fewer accidents, more promotion opportunities into technical occupations, a drastic reduction in the exercise of arbitrary personal authority in the 'foreman's empire', the experience of disciplined collective work on a large scale and the

opportunity to broaden union structures from narrow crafts to whole industries. Taylorism may well have been on balance negative for craft workers; but it constituted a net improvement for the greater mass of less-skilled labourers and operatives. The overall effects on workers were somewhat mixed, but socialization advanced.

The paleo view can call several witnesses for this more dialectical reading of Taylorism. In the US, the Amalgamated Clothing Workers Union under Sidney Hillman encouraged the adoption of scientific management techniques, even conducting time-and-motion analysis seminars for workshop owners, in order to rationalize production and pay (Fraser 1991; see also Jacoby 1983; Nyland 1998). In Sweden, unions in the metal trades and the textile industries gained considerable influence over wages and conditions as a result of the (management-driven) introduction of time-and-motion studies (De Geer 1982). Neo-Marxist LPT research, however, has remained deaf to the mixed assessments made by workers, hearing, and giving voice to, only the criticisms.

## Case 2: Lean Production

Lean production takes Taylorism to new heights. Its effects are still under debate: many critics argue that it represents an intensification of work and of managerial control (e.g. Babson 1995; Rinehart et al. 1997). But its contributions to the socialization of production have not received enough attention.

I illustrate my argument with excerpts from interviews conducted with workers at NUMMI (see Adler 1993; Adler et al. 1999). NUMMI is a unionized auto assembly plant in Northern California, jointly owned by GM and Toyota and operating under Toyota's day-to-day control. The plant inherited its facility and almost its entire workforce (but none of its managers) from the old GM-Fremont organization in 1983. It quickly reached world-class levels of productivity and quality, relying on a rigorous implementation of the Toyota production system, in particular, its 'standardized work' policy. Standardized work is a process for determining the 'one best way' to perform a job; but whereas under traditional Taylorism this determination was made by a work methods engineer, here it was workers themselves who held the stopwatch and analysed alternative methods. Interviews revealed a number of indices of socialization.

### Tools

Tools such as stopwatches were used to determine the best way to do the job rather than simply as a means of exploitation:

'The GM system relied on authority. People with rank — the managers — ruled regardless of their competence or the validity of what they were saying. It was basically a military hierarchy. At NUMMI, rank doesn't mean a damn thing — standardized work means that we all work out the objectively best way to do the job, and everyone does it that way. I might make some minor adjustments because of my height, for example, but I follow the procedure we've laid out because it makes sense.'

### Object

The object of work expanded, even for production workers, to include continuous improvement. The bureaucratic structure of the organization was used to facilitate this expansion of the object of work, rather than only to control recalcitrant workers. Over 85% of workers contributed at least one suggestion per year and on average each worker contributed over three suggestions per year (with an adoption rate of over 80%):

‘The great thing about standardized work is that if everyone is doing the job the same way, and we run into a problem, say a quality problem, we can easily identify where it’s coming from and fix it. If everyone is doing the job however they feel like, you can’t even begin any serious problem-solving.’

This is also illustrated in the way NUMMI handled model changeovers. The major model changes made every four years were planned by teams of production workers. The work of these teams was standardized and formalized in voluminous binders representing the accumulated lessons learned from prior experience. The *hansei* (reflection-review) process allowed NUMMI to progressively refine these procedures:

‘The binders give us best-practice procedures for managing model changes — just like standardized work sheets give the worker best-practice procedures in regular production. And the learning process is the same. In manufacturing, anomalies show up as differences between *takt* time [theoretical cycle time] and the worker’s actual cycle time, and these anomalies lead to problem-solving, which then leads to defining counter-measures, which in turn leads to new standardized work procedures. Anomalies in the changeover process are the differences between our target changeover time and our actual time. The *hansei* process is simply the problem-solving procedure we use to improve our model change process.’

### Community

The collective worker was broadened to the plant:

‘The work teams at NUMMI aren’t like the autonomous teams you read about in other plants. Here, we’re not autonomous because we’re all tied together really tightly [by the assembly line]. But it’s not like we’re just getting squeezed to work harder, because it’s us, the workers, that are making the whole thing work — we’re the ones that make the standardized work and the kaizen suggestions. We run the plant — and if it’s not running right, we stop it.’

Indeed, the collective worker was broadened to include supplier firms:

‘In 23 years working for GM, I never met with a supplier. I never even knew their names except for the names on the boxes. Now, we’re working with suppliers to improve our products. Workers sit down with our engineers and managers and the suppliers’ people and we analyze defects and develop improvement proposals. We even do that with equipment vendors. Stuff like that really gives us a better perspective on how our jobs relate to the whole process. We’re not just drilling holes and slamming nuts onto bolts anymore. Now we have a say in how the product should be made.’

### Workers

Workers at NUMMI received considerably more training than at the US auto makers. In this, NUMMI resembled other Japanese transplants in the US: MacDuffie and Kochan (1995) found that newly hired auto assembly plant production workers

in US firms received on average 42 hours of training in their first six months, as compared to 225 hours in Japanese transplants (at NUMMI it was 250 hours); workers with over one year's experience received 31 hours in the US companies versus 52 in the transplants.

NUMMI's workers' cognitive horizons were broadened by this training and by their production experience:

'At NUMMI, I am constantly learning new things. Right now, I'm part of the 1989 Nova model project team. All the homework and extra work is rough, but it's exciting to be constantly tackling new problems. At GM, they left me in the truck tire mounting department for 8 years of mind-numbing repetition. It was degrading!'

Collaborative interdependence became an internalized norm, both at work and beyond:

'I wish you could talk to the guys' wives about the changes they've seen. I was a typical macho horse's ass when I worked at Fremont. When I got home, I'd get a beer, put my feet up and wait for dinner to be served. I'd figure, "I've done my eight, so just leave me alone." Now, I'm part of a team at work, and I take that attitude home with me, rather than dump my work frustrations all over my family. I'm much more of a partner around the house. I help wash the dishes and do the shopping and stuff. My job here is to care, and I spend eight hours a day doing that job, so it's kind of natural that I take it home with me.'

And the union took on a more progressive, less purely defensive posture. In the words of one UAW official:

'We're going to need union leaders with more technical and management knowledge. We're much more involved now in deciding how the plant operates. That stretches our capabilities. Management is coming to us asking for our input. We really need a union 'production system committee' to study all these issues — people from the plant who understand them and have the time to work on them. The old approach was much simpler — "you make the damned decision and I'll grieve it if I want." Now we need to understand how the production system works. We need to take the time to analyze things, to formulate much more detailed proposals. This system really allows us to take as much power as we know what to do with.'

Counter-posed to these features of work organization at NUMMI was an array of forces reflecting valorization pressures that limited socialization. Under profitability performance pressure, management sometimes sacrificed worker health and safety for profits (Adler et al. 1997). Management had never wholeheartedly accepted the union as a legitimate expression of workers' voice (Adler et al. 1998). Competitive relations within the organization and between it and other parts of its institutional field often undermined collaboration. However, our analysis of work organization must register too the profoundly positive effects for workers that flowed from the socialization wrought by lean production at NUMMI. A paleo-Marxist version of LPT seems well equipped to analyse lean production's contradictory drivers and effects.

In previous work, I presented NUMMI as an 'existence proof' argument that the bureaucratic structure could be implemented in an enabling rather than coercive form, and argued that it was the capitalist character of the firm that undermined the enabling form (Adler and Borys 1996). In that work, the Toyota production system was presented as a form of productive organization that was more advanced and more democratic than traditional, often coercive, Taylorism. Here, we peel another layer from the onion, to argue that under capitalist conditions

bureaucracy typically will be simultaneously coercive and enabling, because these two functions coexist in a contradictory unity, representing respectively the valorization and the socialization aspects of the production process. Depending on the circumstances, one aspect or the other may appear dominant; but the broader generalizations are: (a) the capitalist firm both enables the collective worker in the labour process and coerces workers in the valorization process; (b) these two functions of capitalist bureaucracy coexist in uneasy tension; (c) lean production as it has been implemented in NUMMI was indeed a more 'socialized' form of the labour process than the traditional mass production practices of the Big Three auto manufacturers, both in its objective structure and its subjective experience; and (d) this socialization stands in even sharper contradiction with the fundamentally exploitative nature of the wage relation under which the workers are employed than was the case in the Big Three. Socialization under lean production deepens rather than dissolves the basic contradiction.

### **Paleo-Marxist Challenges to Mainstream Management Studies**

These two case sketches suggest some ways in which a paleo-Marxist form of critical management studies can challenge and engage a fruitful dialogue with mainstream organizational theory.

#### **Tools**

The paleo-Marxist view highlights the tension between socialization expressed in the progressive differentiation and integration of tool makers and tool users and the persistent valorization pressures that encourage firms to design and use tools to coerce more effort from recalcitrant users. This perspective suggests that there is something terribly one-sided about the current fascination with tacit knowledge (Adler 1996; see also Hedlund 1994: 76; Zollo and Winter 2002). In the most common construal (stemming from Polanyi), tacit knowledge is individual and private; in an alternative construal, tacit knowledge can be collective, the property of a community of practice; but in either case, tacit knowledge is essentially local, the antithesis of universal, socialized knowledge. Tacit knowledge is often illustrated by reference to the difficulty of articulating our knowledge of how to ride a bicycle; but consider world-class competitive cycling today. It has benefited from the investment of massive amounts of formal, articulated, engineering and scientific knowledge in perfecting riding technique, bicycles, training programmes, team organization, and (sadly) performance-enhancing drugs and drug-detection technology. Clearly, there is still a tacit dimension to bicycle riding; but just as clearly, theory should acknowledge the emergence of a whole field of science, and the deep transformation of the structure of knowledge that is its corollary.

#### **Object**

The basic object contradiction is between the progressive expansion and enrichment of the object viewed as a technical challenge and the narrowness and poverty of exchange-value as an object of work. This tension is visible in numerous studies of total quality management: management encourages workers to

invest themselves in process improvement, but profit imperatives deter management from acting on the resulting suggestions. In part, the contradiction is captured in institutionalization theory, as a tension between technical and legitimacy constraints; but institutional theory has not always been explicit about the deep ambiguity of ‘technical’ constraints under capitalist conditions: it has often conflated the use-value and exchange-value aspects of the technical domain. As a result, even though institutionalization theory has identified the role of social construction in the symbolic legitimacy domain, it has tended to ‘naturalize’ the technical-task domain (Kirkpatrick and Ackroyd 2003; Adler 2005).

### **Community**

The case sketches highlighted the persistent, contradictory coexistence of enabling and coercive features of modern organizational forms. This analysis sits uneasily with the broad architecture of current management theory. Management theory has long been split between ‘rational’ and ‘natural’ systems views, and within the latter, split between consensus and conflict approaches (Scott 2003). Perhaps organizational research would advance more fruitfully if, instead of playing these perspectives off against each other as if they were incommensurable paradigms, we acknowledged that each reflects part of the whole picture, and focused our research more systematically on understanding their interrelations. To take an example, research on teams in organizations might advance more fruitfully if teams were seen both as a high-performance organization design and as a form of normative and concertive control, and the tension between the two aspects brought into focus as an object of study.

### **Workers**

The preceding cases suggested that firms’ attempts to strengthen collaboration and coordination have profound effects on workers’ self-construals. Marx’s linkage of objective and subjective socialization is developed and extended in Elias’s (2000) discussion of ‘figuration’, and this perspective is emerging as a fruitful avenue for organizational research (Van Iterson et al. 2002). Even though valorization pressures limit the trend, we see new and higher forms of collectivism emerging, ones that we might interpret as differentiated from traditional collectivism by their lower power-distance (Triandis and Gelfand 1998) and/or by their coexistence with high individualism (Kagitcibasi, 1997). This suggests that our theories of motivation may also need expansion. When firms mobilize the collective worker to ensure a more effective labour process, and when workers respond by internalizing and identifying with this community, then autonomy — whether of the individual or of the self-directed team — becomes less salient as a source of motivation in job design: collaborative interdependence may activate more collectivistic sources of motivation (Adler et al. 2006).

## **Work Organization in Historical Perspective**

In conclusion, let us return to the starting point: the future of critical management studies. Others have criticized Braverman and the earliest LPT research

for ignoring factors such as class consciousness, the role of workers' power in shaping work and skill, the limited diffusion of scientific management techniques, and gender and other social and discursive forces in shaping the social construction of skill categories (for recent reviews of criticism and debate, see Wardell 1999; Grugulis et al. 2001; Tinker 2002). I agree that LPT needs a richer account of worker subjectivity. But the preceding discussion of the census occupation data and the case sketches suggest a very different critique, one that demands of LPT that it account for both a long-term increase in average skill levels and a profound change in the form of skill.

The key to an effective response to this demand lies, I have argued, in restoring the causal weight of technology (the forces of production) in our account. Whereas neo-Marxist LPT focuses on the role of capitalist relations of production in shaping work organization, the paleo approach I have proposed situates skill and work organization at the intersection of the forces and the relations of production, influenced by both, and driven by the progressive socialization process.

Rival interpretations of Marx's writings argue that this account gives too much weight to the forces of production — to technology and its inevitable, cumulative advance. They counter that technology is itself socially constructed and therefore cannot play the independent causal role assigned it. Elsewhere (Adler 1990), I have argued that this ambiguity arises because Marx's writings, even *Capital*, mix the analysis of long-term and shorter-term trends, and combine objective analysis with polemical advocacy. The largely technological-determinist interpretation offered by Cohen (1978) and developed here was nevertheless dominant until World War I. Ideologically, it went hand in hand with a sense of the historical inevitability of socialism and a great self-confidence on the part of the major working-class parties.

Since around the First World War, Western Marxists have argued that this paleo-Marxist view concedes too much continuing legitimacy to advanced capitalism. Lenin and the Third International premised its break with Kautsky and the Second International on the thesis that in the advanced capitalist societies, capitalism had already reached its apogee and was no longer capable of stimulating the advance of the forces of production. It is clear now if it wasn't clear then that this was wishful thinking. In retrospect, it is clear too that such wishful thinking was motivated by a desperate desire for revolution in Europe, if only to save the Bolshevik Revolution from the predictably terrible consequences of isolation. The continuing attraction of this apogee thesis would appear to be that if capitalism continued to foster the development of the forces of production, it would be difficult to justify radical hostility to it.<sup>3</sup>

However, on the paleo view, there are plenty of fundamental, and increasingly compelling, reasons to doubt that capitalism is the 'end of history' (*pace* Fukuyama 1992). Even if the aggregate, long-term trend in work organization is towards upgrading, the unevenness of this process is a scandal that is increasingly resented. More generally, the persistence of capitalist relations of production continually aggravates the system's 'savage inequalities' (to use the phrase of Kozol, 1991), its persistent un- and underemployment, its recurrent

economic crises and wars, and its ecological irresponsibility. The paleo view allows critical scholars to advance this critique while acknowledging the progressive aspects of capitalist development in the development of the preconditions for a new form of society. The neo view turns the critique into shrill polemic.

Management theory needs a robust theory of work organization. A paleo-Marxist version of LPT is a good starting point. Empirically, it provides us with a surprisingly intuitive way of grasping the everyday contradictions of the capitalist firm. Theoretically, it allows us to characterize the fundamental limitations of capitalism and how these limitations conflict with a long-term socialization trend; it encourages us to focus our research on the various ways in which the structural contradictions of capitalism are progressively deepened by the very laws of capitalist development. And politically? In the short term, prospects for radical change due to this deepening contradiction may seem dim; but the socialization thesis puts history on the side of radical change.

## Notes

This paper draws on and further develops my paper in *The Skills That Matter*. C. Warhust, I. Grugulis, and E. Keep (eds), 242–260. Basingstoke, UK: Palgrave Macmillan, 2004.

- 1 My exposition of the paleo reading is based on G. A. Cohen's (1978) presentation of Marx's theory of history. Cohen's version of Marx has been criticized by, among others, Levine and Wright (1980) and J. Cohen (1982); see G. A. Cohen's (1988) reply, also Wright et al. (1992). This essay takes G. A. Cohen's interpretation from the general societal plane into the production process. Note that Cohen's interpretation entails neither commitment to nor negation of Marx's labour theory of value or the law of the tendency of the rate of profit to fall. Cohen's interpretation is even less tied to any defence of the former socialist regimes.
- 2 An important qualification is needed to address peasant production. Peasant agriculture relies on a huge and complex body of skills; but these are pre-scientific in character and thus are learned by apprenticeship. 'Modern' agriculture is far less nuanced in its understanding of local conditions; but its productivity is vastly increased by the explicit — thus socialized — nature of the science which underlies it and which stimulates a much faster growth of knowledge. Such scientific agriculture's lack of local understanding make it a blunt tool and ecologically dangerous. But it is an enormously productive blunt tool. And those engaged in this modern capitalist agriculture are drawn out of their local world of tradition and apprenticeship into the world market and culture of fertilizers, of grain, of equipment, of technique, and of science and technology. Modern agriculture relies on more formal schooling (socialized knowledge acquisition) and in this sense, but only in this sense, its skill base is more 'complex'.
- 3 The Moscow-style Marxism of the Third International continued to assert a progressive role for the forces of production in its analysis of less-developed countries: this approach led to Soviet support for 'bourgeois-nationalist' regimes in these countries. It also led to conflict with China: after the Sino-Soviet split in the 1960s. The Maoist interpretation downgraded the causal role of the forces of production even in the Third World, in order to put politics (rather than economics or technology) 'at the post of command'. The Maoist interpretation anticipated — and for some writers, inspired — later 'strong social-constructionism' by reducing the forces of production to a mere materialization of the relations of production.

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