# The Future of Work in the Twenty-First Century

Geoffrey M. Hodgson

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Hertfordshire Business School, University of Hertfordshire, Hatfield, Hertfordshire AL10 9AB, UK
www.geoffrey-hodgson.info
g.m.hodgson@herts.ac.uk

**ABSTRACT**

The institutional nature of work has changed dramatically in over the last 300 years and there is no reason to assume that change will cease in the twenty-first century. This article criticizes the theoretical basis for some previous confident predictions, including de-skilling (Marx), and massive reductions in the extent of the working day (Keynes). It is argued here that further increases in the complexity and knowledge-intensity of work under capitalism are likely, although not inevitable. Some implications of growing complexity, for work and the employment contract, are considered. Raising the question of possible asymmetries between labor and capital, their role in generating future increases in inequality is addressed. On the other hand, growing complexity may lead to radical changes in the employment contract and its evolution into a form of quasi-self-employment. But in an increasingly knowledge-intensive system, those with inadequate training or skills may be left behind. Compensatory policy measures such as a guaranteed basic income and wealth redistribution remain on the agenda.

# The Future of Work in the Twenty-First Century

Geoffrey M. Hodgson[1]

The Bible tells us that work was God's curse upon Adam. In any case, humans must expend mental and physical effort to survive. Work has inhabited many institutional forms, including slavery, wage-labor and self-employment. Wage-labor was widespread in England from the fourteenth century. The nature of the employment relationship has changed dramatically, from semi-feudal penury in the early Industrial Revolution (Steinfeld 2001) to contemporary arrangements providing significant flexibility and autonomy in some professions.

This essay considers the future of work in the twenty-first century. Although some empirical evidence is cited, its approach is more conceptual and analytic. It considers multiple (sometimes conflicting) underlying forces and extant possibilities, rather than firm predictions of outcomes. In particular, it includes critical reflections on Karl Marx's claim that work under capitalism would progressively and necessarily be de-skilled, and John Maynard Keynes's prediction that the working day would be dramatically shortened within a couple of generations.

Instead it is argued that capitalism has capacity to create greater complexity and knowledge-intensity in production, which has major implications for the nature of work. Furthermore, increasing knowledge-intensity places a premium on skilled work, involving educated judgement. Consequently, unless remedial policies are in place, the growth of a less-educated and relatively impoverished underclass is possible, further exacerbating the inherent tendency of capitalism to create greater inequality of income and wealth. On the other hand, the nature and development of educated labor is likely to require considerable flexibility, further weakening authority and control within the employment relationship. This also opens up possibilities for more worker cooperatives and self-employed workers.

This paper has five sections. The first section considers the predictions by Marx and Keynes noted above. While both predictions are feasible, each argument is based on a faulty and one-sided logic. The second section addresses a more likely (but not inevitable) scenario involving increasing complexity and knowledge intensity, and explores some of its implications for the nature of work. The third section considers the generators of inequality under capitalism and how growing knowledge-intensity affects these forces of divergence. Some policies to alleviate inequality are briefly discussed. The fourth section considers the abolition and possible transformation of the employment relationship and its effects on work.

[1] This paper adapts and expands on some material from Hodgson (2015). The author is very grateful to Christopher Brown and anonymous referees for their helpful comments.

Although abolition of the employment relationship has questionably been regarded by some as a priority, growing knowledge intensity in capitalism is leading to its slow but radical transformation. Section five concludes the essay.

## 1. Deskilling or the end of work?

Marx argued that capitalism would lead inevitably to the deskilling of the workforce. Marx (1976: 549, 788) proposed that any specialized skill held by a worker 'vanishes as an infinitesimal quantity in the face of the science, the gigantic natural forces, and the mass of social labour embodied in the system of machinery.' Accordingly, the development of capitalism 'enables the capitalist ... to set in motion more labour ... as he progressively replaces skilled workers by less skilled.' This deskilling thesis was later and famously elaborated by Harry Braverman (1974).

The inevitably-of-deskilling hypothesis is confounded by both evidence and argument. As Alfred Marshall (1920: 263) pointed out, machines first replace the most monotonous and muscular labor. Other forms of work, involving adaptive skills and judgment, are less-readily replaceable by machines. There are greater and cheaper possibilities for creating machines to do simple and repetitive work, compared with getting machines to carry out sophisticated, analytical and creative tasks. Because capitalism is a restless and turbulent system, there are limits to what can be foreseen, codified and routinized. Ongoing requirements of adaptability and oversight, in an ever-changing and uncertain world, provide opportunities for skilled human judgment and intervention.

The prediction of widespread deskilling has failed to materialize. Historical evidence shows that machines can enhance skills rather than reduce them.[2] At least throughout the twentieth century, in many major sectors of modern capitalist economies, skill levels have increased rather than decreased. Citing further evidence against general deskilling, Frederic L. Pryor (1996: 55) concluded:

> Although deskilling in terms of substantive skills has occurred in certain industries, the notion of a general deskilling process for the economy as a whole represents a triumph of ideology over common sense. The fears about a fall in levels of substantive skills arising from the shift into services also are groundless. On the contrary, the evidence shows clearly that the entire job structure is shifting toward work requiring more data analysis, more general education, and also more specific vocational preparation.

Empirical evidence over the lifetime of capitalism confirms the strong overall trends toward higher complexity and increasing levels of skill. While there are examples of deskilling in some spheres, the dynamic core of capitalism has become ever-more complex and knowledge intensive. General deskilling is possible in principle, but neither realized nor inevitable.

But this does not mean that extensive deskilling is ruled out. Simon Head (2005, 2014) provided plentiful evidence of the use of information technology to simplify the work of middle and lower level employees, with digital monitoring to make sure that management rules are obeyed. He examined the increasing use of computer business systems (CBSs) that involve computer networks and vast quantities of information to monitor employees through

[2] Attewell (1992), Wood (1982, 1989), Rubery and Wilkinson (1994), Ashton and Green (1996), Goldin and Katz (1996).

performance indicators and measures of task fulfilment. This substantive evidence is sobering. But some caveats are in order.

First, software monitory and information systems are very costly to set up. While eventually they may quickly reap pecuniary rewards for the company, they are generally tailored to one type of pattern of work. If structures or tasks change radically, then further large fixed costs may be incurred. To allow for such flexibility, trained human judgement would still be required.

Second, if work can be broken down by Taylorist 'scientific managers' into discrete tasks, which are then performance managed using information technology, then those jobs go up the queue for automation. For example, some attention has been given to the way Amazon warehouse employees are monitored and pressured under a system of hi-tech Taylorism. Having broken these jobs into simple tasks, Amazon is exploring their possible automation. In 2012, Amazon bought a company called Kiva that makes robotic sorting systems for warehouses. Head's scenario for 'mindless' work may lead to a 'jobless' exit for the routinized employee.

Third, Head produces a large amount of micro evidence, but no general, macro picture of overall trends. The extent of the digital Taylorism of work is subject to multiple forces. Other things being equal, a higher frequency of radical system change will require a greater number of managers and other employees with sophisticated judgmental skills. Other things being equal, the march of Taylorized work systems creates the greater possibility of automation and opportunities for the *reduction* of Taylorized *human* work. Those displaced could end up unemployed, or move to more complex jobs still requiring sophisticated human judgement. It is a complex and dynamic process, which is difficult to predict.

Head (2014: 191) himself sees ways out of generalized digital deskilling. These involve greater education and training for more highly-skilled jobs, where CBS technologies supplement rather than displace these skills: "There are case histories in the United States and in Europe where alternative, employee-friendly cultures have taken root."

It all depends on which forces and opportunities win out. Scenarios are possible where the rising skill levels that marked the twentieth century are arrested and reversed (Hodgson 1999). Arguably these scenarios would be associated with less innovative and dynamic economies.

Is deskilling more prevalent in less-developed economies? Does globalized capitalism mean the raising of skill levels in the core, while reducing them elsewhere? Such an eventuality is possible in principle, and there is some evidence that exports from richer to poorer nations can have deskilling effects in the less-developed economies (Auer 2010). Head (2014) gives examples of the Taylorist deskilling of factory work in China where workers have limited rights or powers to resist. On the other hand, economies such as China and India, which have taken much manufacturing and exporting activity away from Europe and North America, show scant evidence of general deskilling. Overall, levels of education and training are markedly increasing in these rapidly-growing countries (OECD 2012).

Now let us consider past predictions of a dramatic shortening of the average working day. In a 1930 lecture, Keynes (1931: 325) imagined ongoing exponential economic growth and remarked: 'Think of this in terms of material things – houses, transport, and the like.' After having 'solved' the 'economic problem' of providing for human material needs, Keynes predicted that his hypothetical grandchildren might have to work only fifteen hours a week. More than half a century later, contemplating growing automation, André Gorz (1985) and Jeremy Rifkin (1995) predicted 'the end of work.'

It is true that average numbers of working hours have decreased in developed countries, but to nowhere near the levels envisaged by Keynes and others. Working time previously spent with tools and machinery is now spent on computers and 'smart machines' (Zuboff 1988). Production has become increasingly complex and information-intensive, rather than always involving the processing of materials and things. If past futurologists had understood the production of wealth as an information-processing, cognitive, and judgmental – as well as a physical – process, then they would have been less disposed to forecast dramatic reductions in working hours. The increased variety of produced goods and services, and the growing complexity of economic systems, mean that these knowledge-based, judgmental tasks and possibilities have increased enormously.

Work is changing more dramatically in character than quantity, with waves of innovation in information technology with huge impacts on patterns of employment (Brynjolfsson and McAfee 2012). This presents a massive challenge for economic policy-makers. It also undermines conventional measures of economic activity and output. The conventional methods of measuring and accounting for economic output are deficient not simply because they underestimate the natural environment and omit other forms of important activity, such as unpaid caring work in families and communities. They are also inadequate in their appreciation of the central and growing roles of complex information and knowledge.

## 2. Capitalism and growing complexity

Capitalism is an evolving system with variations between individuals, organizations and nation states, where some endure or are copied more than others (Veblen 1899, Hodgson and Knudsen 2010). There has been a long theoretical debate whether such evolutionary processes necessarily increase systemic complexity (Gould 1977, Saunders and Ho 1976, 1981). Disagreement also surrounds what definitions and measures of complexity to use when such claims are assessed (Adami et al. 2000). Consistent with mathematical information theory, Christoph Adami (2002) upholds that the essence of complexity for an evolving entity is the amount of information that it stores about the environment in which it evolves. Complexity is thus measured as negentropy. It is the difference between the theoretical maximum amount of information about an environment and the actual entropy (disorder) present in organizational habits and routines. As this difference increases, the social organization exhibits less disorder and more complexity and contains more useful information about the environment. By contrast, if there is a diminishing difference between the maximum amount of information and actual entropy, then organizations lose track of the environment and exhibit less physical complexity.

Some evolutionary processes in biology can be rapid, such as mutations in viruses. But if we were to time-travel back 10,000 years we would be familiar with most of the plants and animal species that we found on Earth, despite significant changes of climate and species distribution. By contrast, technology would be rudimentary compared to today, and human institutions would be relatively primitive. Especially since 1750, social and economic change has been dramatic. Institutions and technology have become much more sophisticated. Complexity has grown rapidly in the socio-economic sphere. Capitalism is by far the most dynamic and complex economic system so far in human history.

What are the drivers of rapidly increasing complexity within capitalism? One major factor is the expansion and diversification of markets. As Adam Smith proposed, the growth of markets can enable an ever-finer division of labor, which in turn can fuel greater productivity,

reduce costs and enable a further enlargement of markets. Allyn Young (1928:. 537) argued in a classic article that 'industrial differentiation … remains the type of change characteristically associated with the growth of production.' He also underlined 'the increase in the complexity of the apparatus of living, as shown by the increase in the variety of goods offered in consumers' markets' plus an allegedly greater 'diversification of intermediate products.'

Capitalist corporations seek ever-new opportunities for trade and gain. As competition intensifies within particular markets, profit-seeking corporations innovate and diversify their products, in the unceasing pursuit of new market niches (Chamberlin 1933, Abernathy and Clark 1985, Rueschemeyer 1986, Metcalfe 1998). Firms in competition continuously face the choice of sticking with the same products and trying to drive down costs, or to innovate and find new product niches. Many firms invest in new technology or new skills. In this quest for innovation, the frontiers of science and technology are advanced, leading to new fields of knowledge and enquiry. New products are created and marketed. Improved global communications and increased mobility give a further impetus to product diversification and greater complexity. New and varied organizational forms are devised to increase productivity and to manage an exponentially expanding number of products and processes. Accordingly, there is a long-run tendency in dynamic capitalist economic systems towards greater complexity, driven by powerful economic forces, both caused by and causing the widening of markets, and leading to innovation and greater product diversification (Warsh 1985, Pryor 1996).

Complexity and variety grew in preceding socio-economic systems, particularly when there was expanding trade and growing markets. What additional conditions promoted the spectacular rise of productivity in capitalism after 1800? Joseph Schumpeter (1934) and others were right to underline the role of the financial sector and its capacity to bankroll corporate innovation and expansion. In the leading capitalist countries these necessary conditions set off a process of positive feedback, where corporate innovation fed markets and markets fed innovation. Economies grew remarkably in both scale and complexity.

Capitalism has created a cornucopia of different outputs. Eric Beinhocker (2006: 9, 456-457) estimated that there may be about ten billion distinct goods for sale in New York City. There were far fewer in the year 1800. By investigating the diversity and pattern of exported products, César A. Hidalgo and Ricardo Hausmann (2009) measured the complexity levels of several national economies. They showed that these measures of complexity are correlated with a country's level of income, further indicating that capitalist economic development is strongly associated with both a growth of knowledge and a growth of complexity (Hausmann et al. 2011).

Although a growth in complexity and a rise in average levels of skill are not the same thing, but they have been, and are likely to continue to be, causally interlinked and correlated. Continuous innovation requires retraining and adaptability. We can consider an alternative scenario where computers displace human ingenuity and the remaining work of humans would become routine and inflexible (Hodgson 1999: 186-9, 235-70). But computer algorithms cannot replace all human intuition and tacit judgment (Dreyfus and Dreyfus 1986). At least for the foreseeable future, growing complexity is more likely to depend upon rising levels of human skill, especially skills involving information technology (Zuboff 1988, Levy and Murnane 1996).

But the growth of complexity in capitalism is not preordained. Capitalism has existed for a few hundred years. We cannot generalize from such a short period. We can conceive of long periods of crisis or stagnation, with slower rates of innovation. Nuclear conflict, pandemics,

ecological catastrophes, or natural disasters may drag capitalism back to a lower level of development. With increasing dependence on electronic information networks, and greater vulnerability to cyber-attacks and system crashes, the integration and complexity of global capitalism has itself become a problem that could endanger its survival.

To some degree, the growing knowledge intensity of capitalism threatens the logic of a system based on well-defined property rights. The peculiarities of information as an asset were noted by Richard Nelson (1959) and Kenneth Arrow (1962). In addition, attempts to establish widespread private ownership of information, thus making vital non-rivalrous resources excludable, can have inegalitarian and dysfunctional consequences. The growing knowledge-intensity of capitalism challenges the universal claims of private property. Attempts to over-extend rights of ownership of information can challenge the vitality of capitalism at its core (Heller 2008). We could end up with an 'intellectual monopoly capitalism' that, through monopolized property rights in information that in principle could be usefully and cheaply dispersed, is highly sub-optimal in performance terms (Pagano 2014).

This would be especially the case in a knowledge-intensive economy where the accumulation of capital (i.e. collateralizable property) required much knowledge to be privatized. This denial of shared possession of non-rival assets would constrain the growth of knowledge-intensive capitalism. This could lead to political challenges to the system.

It is also clear that the past dynamism of capitalism has depended on a delicate institutional arrangement of political, legal, cultural and other conditions. These institutions can unravel. The massive growth of variety and complexity in capitalism, exhibited especially in the second half of the twentieth century, may not be as rapid in the twenty-first. But prediction, especially with complex systems, is highly fallible.

## 3. Work, exploitation and inequality

An implication of growing knowledge intensity under capitalism is that a greater premium is based on education, knowledge and knowledge-intensive skills. Consequently, unless there are successful efforts to provided adequate advanced education and training for everyone, then there is the possibility of a growing divide – involving different levels of income and social inclusion – between those with and without such skills. Without broad and inclusive educational provision, we face the possibility of a growing underclass consigned to menial jobs and lower pay.

Potential inequality due to growing knowledge intensity adds to other mechanisms of inequality under capitalism. Marx assumed a labor theory value: having presumed that labor was the source of all value, he then declared that those that lived off property were exploiting those that worked. But this assumes what it has to prove. Instead we must look at asymmetries between labor and capital ownership that stem from their nature, rather than from an arbitrary and biased assumption. Detecting one such asymmetry, the political philosopher Thomas Green (1888: 373) wrote:

> Labour, the economist tells us, is a commodity exchangeable like other commodities. This is in a certain sense true, but it is a commodity which attaches in a peculiar manner to the person of man. Hence restrictions may need to be placed on the sale of this commodity which would be unnecessary in other cases, in order to prevent labour from being sold under conditions which make it impossible for the person selling it ever to become a free contributor to social good in any form.

The economist Alfred Marshall (1920: 566) echoed this idea: 'when a person sells his services, he has to present himself where they are delivered. It matters nothing to the seller of bricks whether they are to be used in building a palace or a sewer: but it matters a great deal to the seller of labour.' John A. Hobson (1929: 209) wrote similarly that a 'disabling element in the sale of labour-power is that it is not detachable in the conditions of its delivery from the human factors of personality.' Compared with the capitalist who makes his property available and may reap a reward without actually being present on the job, the worker and her labor-power are inseparable (Dow 2003). I have called this *corporeal exploitation* (Hodgson 1982).

Corporeal exploitation is present in any mode of production involving labor and other owned factors of production. The problem is the disadvantage that inseparability bestows upon labor, compared with the owners of other factors. Given that capitalists can delegate the tasks of management to others, and obtain rewards simply from their ownership of non-labor assets, they are placed at an advantage. They can use their time for trading and other entrepreneurial ventures, while simultaneously their property reaps rewards. Hence corporeal exploitation is likely to have cumulative effects, creating a widening division between one social class and another. Workers have less time to devote to their education or training, or to search for alternative opportunities.

The differences between factors of production in this regard can be ended, by eradicating the capacity to reap a reward from the private ownership of non-labor assets. This might happen through wholesale nationalization, or by creating an economy with self-employed producers or worker cooperatives. None of these solutions overcomes the inseparability of laboring activity from the worker: at best they deal with labor's disadvantage by abolishing incomes from the separate ownership of other factors of production.

Alleviation of the problem of corporeal exploitation can result from the reduction of the working day, which would give workers more time apart from their work. But the fundamental difference – noted by Green, Marshall and Hobson – between the inseparability of labor from its agency, and the separability of other assets from their proprietors, will always remain within capitalism.

Corporeal exploitation is different from *bargaining exploitation*, which results from asymmetries of bargaining power between agents in the sphere of exchange.[3] But although employers often have much greater bargaining power, combinations of workers can sometimes exert strong bargaining power over employers. Bargaining exploitation typically exists under capitalism, but strictly it is not necessary for its existence. In principle it is conceivable that capitalism could exist with relatively little bargaining asymmetry, particularly if employees were organized in very strong unions.[4]

By contrast, the collateralization of property is central to the functioning of capitalism (Hodgson 2015). In the real world, beyond the distortions of economics and sociology, capital

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[3] In Hodgson (1982) I noted Chamberlain's (1951) measure of bargaining power: bargaining power of A = (cost to B of disagreement with A)/(cost to B of agreement with A). In Marshall's (1920, pp. 565-9) discussion of the "peculiarities" of labor, as opposed to other agents of production, he (p. 569) saw these peculiarities as a source of labor's "disadvantage in bargaining" which "wherever it exists is likely to be cumulative in its effects."

[4] Some economists identified a source of asymmetrical bargaining power in the "perishability" of labor power (Marshall 1920, p. 567; Hobson 1929, pp. 208-9). If unemployed this hour, then that labor is lost forever. Here, "perishability" relates to opportunities for use. Hence, as Marshall (1920, p. 567) concedes and Hutt (1930) emphasizes, land and machines are also perishable in this sense. A machine unused is also an opportunity lost forever. Labor power is not unique in this respect.

means property that can be used as collateral for securing monetary loans (Hodgson 2014, 2015). Differential collateralizability leads us to another dimension of exploitation and a powerful engine of cumulative inequality. Employees are not slaves and selling oneself into slavery is prohibited. Hence capitalism limits the possibility of mortgaging labor power. Banks may lend money on the basis of expected future earnings. But if the loan is not repaid, they cannot seize the earner and sell her as a slave. Freedom from enslavement denies the employee opportunities for obtaining loans using labor assets as collateral. This is *exploitation through unequal collateralizability*.[5]

Unequal access to collateral is a major source of further inequality. Unless they have other property, workers cannot obtain sizeable loans. By contrast, the capitalist receives incomes from property, which can also be used as collateral to borrow more money and invest still more in profitable enterprises. Capitalism thus follows the Biblical maxim: 'for whosoever hath, to him shall be given, and he shall have more abundance: but whosoever hath not, from him shall be taken away even that he hath.'[6]

*The foremost generator of inequality under capitalism is capital*.[7] This may sound Marxist, but it is not. Elsewhere (Hodgson 2014, 2015) I defined capital differently from Marx and most other economists (excepting Fetter, Hobson, Mitchell Innes, Schumpeter, Sombart and Weber). Capital is money, or the realizable money-value of owned and collateralizable property. Precisely because waged employees are not slaves, they cannot use their lifetime capacity for work as collateral to obtain money loans. The very commercial freedom of a worker denies her the possibility to use her labor assets or skills as collateral. By contrast, the capitalist may use his property to make profits, and as collateral to borrow money, invest and make still more money. Differences become cumulative, between those with and without collateralizable assets, and between different amounts of collateralizable wealth. Even when workers become home-owners with mortgages, the wealthier can still race ahead.

Labor cannot be collateralized because workers are not owned. They do not contract their entire future working lives to an employer: there are missing futures markets for labor. A further and very important consequence is that employers have diminished incentives to invest in the skills of their workforce. As Marshall (1920: 565) put it: 'Here again we meet the difficulty that whoever may incur the expense of investing capital in developing the abilities of the workman, these abilities will be the property of the workman himself: and thus the virtue of those who have aided him must remain for the greater part its own reward.' Especially as capitalism becomes more knowledge-intensive, and unless compensatory measures are put in place, an unskilled and low-paid underclass can emerge through insufficient employer incentives to train their workers. This would further exacerbate inequality. Suitable compensatory measures include a state subsidy for training at work (Holzer et al. 1993, Van Horn and Fichtner 2003, Thelen 2004).

Another source of inequality results from the inseparability of the worker from the work itself. By contrast, the owners of other factors or production are free to trade and seek other

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[5] This does not mean that slaves are free of exploitation. They suffer the loss of legal rights and are exploited in different ways. The forms of exploitation discussed here are the ones most relevant for capitalism.

[6] Matthew ch. 13, v. 12. See also Mark, ch. 4, v. 25, Luke ch. 8, v. 18 and Luke ch. 19, v. 26.

[7] Piketty (2014) provided historical data and rich empirical vindication of this claim. He showed that the main driver of inequality is the tendency of returns on capital to exceed the rate of economic growth.

opportunities while their property makes money or yields other rewards. As Green, Marshall and Hobson recognized, this puts workers at a disadvantage. As noted above, even slight disadvantages can have cumulative effects.

None of these core drivers of inequality can be diminished by extending markets or increasing competition. These drivers are congenital to capitalism and its system of wage labor. If capitalism is to be retained, then the compensatory arrangements required to counter inequality cannot simply be extensions of markets or private property rights. Instead, other measures such as wealth redistribution are placed on the agenda (Paine 1797, Ackerman and Alstott 1999, Bowles and Gintis 1999, Piketty 2014).

As noted above, in modern capitalism those deprived of such education suffer a degree of social exclusion, and this problem, unless addressed, is likely to get worse (Cowen 2013). Widespread skill-development policies are needed, alongside integrated measures to deal with job displacement and unemployment (Ashton and Green 1996, Crouch et al. 1999, Acemoglu and Autor 2011, 2012).

The need for ongoing education is an additional argument for a basic income guarantee. Such a basic income would be paid to everyone out of state funds, irrespective of other income or wealth, and whether working or not (Van Parijs 1992, 1995, Corning 2011). It is justified on the grounds that individuals require a minimum income to function as free and choosing agents. Everyone has the right to the means of survival, so that they can make use of their liberty, have some autonomy, function as effective citizens, and participate in civil society. These are conditions of adequate and educated inclusion in the market world of choice and trade.

A basic income would also reward caring work to help the sick or elderly, which is typically performed within families. But it is typically undervalued and uncompensated monetarily (Folbre 1995, Folbre and Nelson 2000, Nussbaum 2000, Jochimsen 2003). A basic income would also encourage new entrepreneurs and creative artists, and reduce migration from the countryside to the cities in search of work. There would also be a huge saving in administration costs of often complex social security and welfare schemes.

## 4. Beyond employment?

Marx upheld that the employment relationship is a central defining feature of capitalism. In an employment contract the worker agrees, within limits, to work under the authority of an employer. There is potential employer control over the manner and pattern of work. This control typically concerns the manner and specification of the work to be performed. Marx argued in *Capital* that the power of 'capital' is exercised precisely at this point, within the sphere of production, where 'surplus value' is allegedly generated. Hence, for Marxists, the abolition of the employment relationship is one of their foremost political objectives (Screpanti 2001, Wolff 2012).

Also from a non-Marxist viewpoint, David Ellerman (1992) criticized the employment relationship: he saw it as partial slavery. The slave owner has control rights over the slave. An employee rents her capacities for a limited period of time, and grants control rights for that period to an employer. Ellerman argued that just as slavery is immoral and illegal, employment likewise should be condemned and prohibited. Voluntary agreement to an employment contract is not a valid counter-argument. There are prohibitions in most countries on many consensual activities: individuals are not allowed to sell banned drugs, their votes, or

themselves into slavery. According to Ellerman, entering into an employment contract, thereby conceding authority to an employer means an abdication of individual rights and responsibilities and it should be outlawed. His alternative is a system of worker cooperatives, where decisions are taken jointly and democratically by the workforce, and no-one is strictly an employee. Following Jaroslav Vanek (1970, 1972) and others, Ellerman proposed the abolition of all capitalist firms, and their replacement by autonomous worker cooperatives, each able to enter into contracts and trade on markets.

Possible advantages of such a system of worker cooperatives are discussed below. But is the abolition of employment a priority? An opposing case is less absolutist and more lenient. This would permit wider experimentation with different forms, including modified capitalist firms and corporations.

But Ellerman and others would protest: for them this is a matter of principle. There can be no compromise with this modern version of servitude: people should be neither rented nor sold. But the real world is more complex. Just as in practice the line is often difficult to draw between an employment contract and a contract for services, authority and responsibility each come in fifty shades of grey.

In some practical cases the exercise of authority by employers is extremely limited. For example, with knowledge-intensive employment, close detailed supervision is often dysfunctional or impossible. Often the knowledge worker has more specialist knowledge than her line manager. But it is also the case with other professions. An employed truck driver is told what load to pick up, and when and where it should be delivered. Otherwise there is little close supervision of the activity. The pattern and nature of the work would not be changed hugely if the driver owned the truck and was self-employed. Self-employment has advantages, but also the disadvantages that the driver has greater responsibility for the upkeep of the truck and increased financial anxieties. The choice is not black versus white.

Authority of a kind exists in worker cooperatives. The inevitable division of labor leads to different roles and identities. Within groups, leaders typically emerge. Although individuals in the group may nominally have equal rights and votes, studies of group dynamics show internal group differentiation, subgroup formation, differential influence, and the emergence of hierarchies of power (Hogg and Terry 2000, Keltner et al. 2008). While workers in a cooperative cannot be threatened with dismissal in the same way as employees, other threats and sanctions operate within groups.

A worker shareholder in a cooperative has ties and responsibilities that may not suit everyone. Majority rule in a democratic collective can compromise the needs or rights of minorities. For example, pressure may be put on all workers to put in the same hours, thus side-lining part-time or flexible work patterns. The difficulty of shareholder exit is a serious problem in worker cooperatives. Workers may not be able to sell or obtain the full value of their share. The employment relationship is typically easier and less costly to terminate. Many people are willing to accede to some authority in the workplace in return for greater flexibility in dealing with the rest of their lives.

Finally, submission to political authority in any large society is unavoidable. Modern states involve monopolies of legitimate force and complex legal systems to which, even in a democracy, no-one has consented in detail. The abolition of all authority is the pipe-dream of anarchism. The practical focus instead should be on checks, balances, legal limitations, and democratically accountable oversight.

Consequently, the emphasis should be on improving the rules and conditions governing the employment relationship rather than abolishing it entirely. This would involve both general legislation and employee negotiation with particular employers. The general policy approach towards the organization of enterprise should be experimental, trying different types of firms, including cooperatives and other structures. Find what works best, in regard to individual satisfaction and human flourishing, as well as profitability or revenue. Then experiment anew.

Consider the implications of specialization and growing knowledge-intensity in a capitalist economy, with possible scenarios rather than predictions. It is an exercise in 'what if?' Other outcomes are possible, including mass automation and consumption without human cultural enrichment, or an economy where information technology results in increased surveillance rather than the development of skills (Head 2005, 2014; Brynjolfsson and McAfee 2012).

One possible path of capitalist development may undermine the employment relationship within capitalism. The scenario explored here concerns the most knowledge-intensive core of the world capitalist system, rather than every sector or recess. This does not rule out the persistence of a substantial underclass of unskilled or unemployed workers, in both developed and developing countries.

Employment involves potential control and supervision by others. But as Peter Drucker (1993: 107) pointed out, the knowledge-intensive organization 'is increasingly composed of specialists, each of whom knows more about his or her own specialty than anybody else in the organization.' If the worker has highly specific and idiosyncratic skills, then proficient supervision and control depend also on the possession of relevant capabilities by the supervisor. As complexity and specialization increase, these particular capabilities may become increasingly scarce. Close and highly evaluative supervision, based on a hierarchy of command, would be less viable, simply because the nominal supervisors will not know the best way of doing the job, or even its precise purpose. The worker will know better (Cornuelle 1976, Zuboff 1988).

In a complex, evolving, knowledge-intensive system, agents require sophisticated cognitive abilities. Workers and managers have to learn, adapt and create anew.[8] A knowledge-intensive economy involves the dematerialization of much production, and the shift from physical to intellective skills. As Shoshana Zuboff (1988: 71) put it in her classic study: 'Immediate physical responses must be replaced by an abstract thought process in which options are considered, and choices are made and then translated into the terms of the information system.' The growing knowledge-intensity of work means a shift from physical power and dexterity to the processing and evaluation of ideas. All human activity involves the use of both muscle and brain. But as the balance shifts radically from muscle to intellect and from the manipulation of materials to symbols, work undergoes a fundamental transformation.

Computers can mimic some aspects of intelligent behavior with their immense data-processing powers. But (at least so far) they cannot replicate key features of human intelligence. Crucially, they lack intuition and sophisticated judgment (Dreyfus and Dreyfus 1986), including the capacity for moral judgement. Insofar as computers can take over some functions, the overall, net outcome in terms of the balance of skills in the workforce is not necessarily towards deskilling.

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[8] See Marquand (1989), Senge (1990), Drucker (1993), Fransman (1994), Boisot (1995), Nonaka and Takeuchi (1995), Choo (1998).

Computers may free up skilled workers for tasks of a more evaluative and judgmental character. Critical judgment involves asking questions and saying 'no' when things do not seem right. But questioning established procedures can be inimical to managerial authority. As Zuboff (1988: 291, 308) elaborated:

> Obedience has been the axial principle of task execution in the traditional environment of imperative control. … When tasks require intellective effort, however, obedience can be dysfunctional and can impede the exploitation of information. Under such conditions, internal commitment and motivation replace authority as the primary bond between the individual and the task. … The explication of meaning that is so central to the development of intellective skills requires that people become their own authorities. ... Without the consensual immediacy of a shared action context, individuals must construct interpretations of the information at hand and so reveal what they believe to be significant. In this way, authority is located in the process of creating and articulating meaning, rather than in a particular position or function.

The shift from physical to intellectual work can undermine supervisory powers. With physical work, managers can observe the activity and its output, and make judgments concerning the efficiency and aptitude of the worker. But with intellective skills, meaningful supervision is less viable. It is impossible to see what is going on in someone's head.

*Consequently, as the complexity and knowledge-intensity of production processes increase, the key characteristic in the employment contract of detailed managerial control is increasingly bounded and impaired.*

On the other hand, developments in information technology increase possibilities for workforce surveillance (Head 2005, 2014). But such oversight would mainly concern the detectable aspects of work, and less the quality of judgment and the workings of the mind. If managers cannot know some of what their workers know, then neither I suggest can technology. Furthermore, the installation of surveillance systems can also undermine the culture of trust and co-operation which is necessary for the full development of the knowledge-intensive economy.

Well before the end of the twentieth century the possibilities for detailed monitoring were limited. As Nelson (1981: 1038) pointed out: 'management cannot effectively 'choose' what is to be done in any detailed way, and has only broad control over what is done, and how well. Only a small portion of what people actually do on a job can be monitored in detail.' As complexity, specialization and knowledge-intensity increase, detailed managerial direction will become less viable and productive. Workers have always possessed some tacit and other skills beyond the reach of managerial comprehension. But in modern, complex, knowledge-intensive capitalism the predicament has become immensely more compounded and severe. What were formerly regarded as exclusively managerial, administrative or organizational capabilities are increasingly being expected of other workers. The old distinctions between the conception of a task and its execution, as elaborated in the 'scientific management' of Frederick Winslow Taylor (1911), have long been eroded (Vroom and Deci 1970).

A further consequence of an increasing reliance on advanced skills and knowledge, would be that these become relatively more important, compared with the physical instruments of work, such as tools and machines. This shifting balance would be expressed in changes in relative costs. Insofar as the physical means of production become relatively less important, the question of who owns them becomes less consequential to a similar degree. Accordingly, the possession of useful knowledge and skills by the worker increases in relative significance, compared to the tangible instruments of work. It is not being suggested that we should

disregard the question of who owns the means of production. What is being argued is that the changing balance between intangible and tangible assets and the growing reliance on knowledge and skills mean that the relative bargaining power of the skilled employee increases, and the gap in this respect between the skilled and the unskilled worker widens. These differences lead to growing differences of income, and possible shortages of skilled labor, compared with possible mass unemployment of unskilled labor.

As more workers would be in possession of valuable set of conceptual, analytical, administrate and other skills, then the notion of 'proletarians' – meaning literally that they possess nothing but their children – become even more of an exaggeration. But this does not mean the abolition of divisions between social classes, or necessarily a reduction in material inequality.

These developments create increasing practical problems for the legal distinction between employment contracts and contracts for services. The legal system has already experienced severe difficulties in identifying whether or not a worker is under the detailed supervisory control of another person. Hence, as noted above, the provision or otherwise of the physical instruments of work is often used as a surrogate criterion. But knowledge is intangible, so this legal test faces severe difficulties. Self-employed experts and consultants are widely used in modern capitalism, yet their provision of physical instruments of work is minimal.

As the boundary between manager and employee breaks down, a kind of quasi-self-employment may develop. By owning part of the intangible means of production, in the form of specialist knowledge, and having a considerable degree of control over her work process, in some respects the employee will resemble a self-employed worker. On the other hand, the employing corporation will retain ownership of the goods or services that are produced, of the physical means of production, and some of the crucial mechanisms of knowledge accreditation. For these reasons the worker does not become fully self-employed, in either a *de facto* or a *de jure* sense. Nevertheless, the possession of highly specialist knowledge, and the control of the work process by the employee, can give the worker some practical autonomy. We can find examples of this quasi-self-employment today, in many public and private universities, and in some research units in large, knowledge-intensive capitalist corporations.

As Charles Handy (1984) pointed out, with the increase in the relative and absolute cost of specialist skills, there may be more cases of employment contracts being replaced by *de facto* and *de jure* self-employment, where the skilled worker contracts explicitly for specific services, not hours of work. The relatively high cost of skilled labor provides a strong push towards the hiring of the services of skilled, professional individuals or groups, on the basis of a contract for services rather than an employment contract.

With the increasing role of specialist and idiosyncratic knowledge, and the emergence of real- and quasi-self-employment, the stipulation of a number of hours to be worked would lose much of its operational significance and meaning. Even if she remains formally an employee, the knowledge worker may require periods of contemplation, reading, research or study that cannot always be confined to official office hours. By its nature, knowledge work means a shift from time-keeping to normative control, permitting indefinite extension and intensification. Work will be taken home, to be performed in an unsupervised environment. The boundary between work and leisure becomes blurred. These developments bring severe dangers, such as overwork and a deprived family life, as well as benefits such as self-supervision and autonomy.

With all these developments, the meaning of the employment contract would be stretched to the limit, creating normative and legal tensions that may suggest its radical reformulation. This bodes the end of the classical employment relationship, the transformation of the capitalist firm, and definitionally the demise of capitalism itself.

These developments are detectable are some areas of work, even in profit-hungry capitalist corporations. It remains to be seen whether this scenario will become more widespread, or whether different futures shall unfold. While employment contracts have a long history going back to medieval times, the nature of the employment contract has changed radically over the centuries, from quasi-feudal servitude, through centuries where employees faced the sanctions of criminal law, to the degree of autonomy and self-motivation found in some areas of modern employment today. Further fundamental changes cannot be ruled out.

## 5. Conclusion

We cannot predict the future. At best we can identify some trends. One of these is growing complexity and knowledge intensity in capitalism, and these have major implications for the employment contract and the nature of work. At the same time, inequality is on a strong upward trend in several major countries (Piketty 2014). All of these developments involve major challenges.

Capitalism is a restless system and it will continue to develop. One possible scenario is where the employment contract (at least in the most knowledge-intensive sectors) moves toward a form of quasi-self-employment. Work and employment have changed dramatically since the 1700s and there is no reason to assume that their development will come to an end. Employment contracts may also be pushed aside by growing worker cooperatives or self-employment. If – like Marx – our definition of capitalism involves the ubiquity of the employment relationship, then these developments could signal the end of capitalism, although this scenario is very different from the one envisaged by Marx.

These developments offer major challenges. The traditional role of trade unions is brought into question. While they may retain the vital role of representation of the workforce in negotiations with employers over broad issues of common concern, professional and more specific issues such as the provision of education, training and legal support in an increasingly complex environment become relatively more important.

At the national and international levels, policymakers have to address matters such as growing inequality, and the provision of widespread education and training to minimize the less-educated underclass. Policy measures such as a guaranteed basic income and wealth redistribution remain on the agenda.

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