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Value is as value does: Twixt knowledge and the world economy

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Abstract

This paper addresses two important, conspicuous topics for the understanding of contemporary capitalism: the world market and the knowledge economy. By locating these within Marx's value theory, its authors take issue with other interpretations that explicitly reject or misinterpret Marx's value theory in light of these themes. More generally, these exercises point to the need for value theory and the fact that it should and can move beyond its traditional terrain, collaborating with other strands of critical thought in understanding developments within contemporary society.

Keywords

Marxist political economy, value theory, knowledge economy, world market

Introduction

There has been an enduring paradox in debate around Marx's value theory (Fine, 2001).[1] This is that both proponents and opponents of the theory appeal to the same phenomena as the basis for their positions. Value (even if transformed into price of production) does not equal market price, so we must reject the labour theory of value, says one. This is precisely why we need value theory, says the other. And this is before we move onto skills, rent, interest, world economy, non-wage labour, knowledge, monopoly, crises, and so on.

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As proponents of value theory, for us this paradox is resolved by the simplicity of the stance adopted on what it consists of: a theory that seeks to trace out how labour-time exercised within capitalist production is attached to market forms, with corresponding consequences. Since this is not a matter of right or wrong, but of material reality, the challenge is that of reproducing the structures, processes, relations and agencies in thought. In this respect, properly interpreted as such, Marx endowed us with a rich body of theory, addressing value in the complex context of the accumulation of capital, its laws of production, and their reproduction through distribution and exchange. Taken seriously and constructively, his contribution suffices to dismiss interpretations that either view value theory as a (generally inadequate) theory of (equilibrium) price or, even if more favourably inclined, impose ideal fixes to value theory rather than tracing out the complexity of value relations (as is often an error in most 'correct' treatments of the so-called transformation problem) (Fine et al., 2004). The point is not to use value theory in order to get some ideal price theory correct, but to select and reproduce material processes in thought. Thus it is hardly surprising that controversies over abstract issues such as the transformation problem should prove so bitter, pervasive and long lasting, for they reflect very big differences in interpretations of Marx as well as his method. By the same token, if anyone has been lucky enough to get the solution right (and plenty believe they have), there is no guarantee that such virtue will extend appropriately into other areas of application.

Of necessity rather than weakness, Marx's own value theory is both selective and (hence) incomplete, but for two different reasons. First, there are a multitude of determinants in the passage from production processes through to exchange, use and reproduction. Marx's own preoccupation, as a reflection of capital within its most advanced stage, is with the formation of exchange relations, as productivity is enhanced through accumulation of capital (both transformation of value into prices of production, and the law of the tendency of the rate of profit to fall) and the distribution of surplus value in the form of industrial and commercial profit, interest and rent (see Fine and Saad-Filho, 2010, for an elementary exposition). While quantitative relations are involved, the primary concern is with the appropriate logical derivation of categories and their location in the structure of abstraction and—not quite the same thing in practice and certainly not methodologically—the nature and structure of causation. Second, though, logically derived analyses—such as the difference between productive and unproductive labour, the nature of interest-bearing capital, and the impact of landed property—can only be taken so far before more historically specific developments have to be taken into account and incorporated to make any legitimate progress. This is important in posing the most relevant issues as well as in addressing them appropriately.

These observations are borne out by our judicious selection of two topics by which we seek both to defend and to extend value theory. For each, necessarily briefly, we address, even tease out, Marx's own contribution, whether or not this is recognized by subsequent literature and, if so, whether it has been falsely interpreted and/or rejected; and, ultimately, we offer an alternative within value theory.

The first of these applications is to locate the world market within Marx's value theory. Significantly, a later volume of *Capital* may in part have been intended to be dedicated to the topic (as well as to wages and the state) and so, no doubt, it potentially falls within the scope of value theory as understood by Marx. And even if under a different nomenclature—most notably that of 'globalization' today—the need to address the world market is both imperative and indicative of a different nature (and history) than would or could have been addressed by Marx himself during his own lifetime. Further, the question of the world market as such has rarely been satisfactorily or fully addressed by subsequent Marxists. Is it simply the global economy considered in abstract as an instance of capitalist accumulation (with the coexistence of capitals and non-capitals in articulation with one another); or is it national systems of accumulation with their own dynamics, even if articulated with one another to form the world market? Each of these two extremes seems to miss something from the other: how do we address distinct national economies (or are they a fiction?) if working at the abstract level of the world economy; and how does the world economy impact upon national economies rather than vice versa? We confront these issues by demonstrating how the world market is present both at the outset of Marx's theory of capitalism (both logically and historically), and reproduced (similarly) at more complex and concrete levels in tandem with value theory itself.

Thus, as laid out in the second section, our position is, as was Marx's intention, to proceed from the world market as constituted both logically and historically out of the ensemble of exchange relations based on, but not reducible to, the production and realization of capital accumulation at a global level. In other words, the challenge is both to derive the forms logically taken by capital accumulation, and to constitute them as they are historically materialized and evolved in practice.

A very different issue (and challenge) for Marxist value theory is addressed in the third section, and it is one that predominantly reflects contemporary developments, however interpreted (and exaggerated), and which could hardly have been anticipated by Marx himself. This concerns the so-called 'knowledge economy', as variously termed and interpreted within Marxist and non-Marxist scholarship and strategizing. As previously indicated, we offer a partial overview of different approaches, concentrating on those that reject value theory in light of the emergence of the knowledge economy. We suggest that they display a limited understanding of value theory, of knowledge itself, and of the contribution that is already present for the understanding of knowledge within Marxist theory. The knowledge economy is extremely diverse in terms of functions and substance, ranging across the enhancing of productivity, the generation of new products and processes, and the governance of economic, social and ideological reproduction. None of these is new, although the balance and content across them is subject to transformation and, equally, amenable as such to value theory, once the role within it of the distinctions between conception and execution and individual and collective labour through cooperation are delineated.

In our concluding remarks, we shift gear to discuss the role that value theory might play in the future. As remarked at the outset, in life as in theory, the dialectical tension between rejecting and accepting value can only strengthen as capitalism incorporates new forms and complexities as it evolves.

Value in the world market

Marxist political economy has traditionally been strong in its 'global' aspects. This has been so for two reasons. First, from a logical perspective, it takes abstract categories such as those associated with value as its starting point. And the same applies to class, capital, and labour, each of which can be projected to the global level. Second, from a historical perspective, more or less immediately following Marx's death, the most important developments within Marxist political economy concerned what have become the classical theories of imperialism. These necessarily placed capitalism as a world system on the agenda with, especially through the influence of Lenin, considerable emphasis placed on monopoly, finance, cartelization of world markets and inter-imperialist rivalries to the point of global warfare.

Despite, or even because of, this affinity to the global, there have been tensions within Marxist theory on how to address capitalism as a world system, not least since the abstract categories, which allow it to be taken as an object of study, can equally be projected to a national level or even to other levels above or below. There is a chicken-and-egg problem of what comes first: the global or its constituent elements, especially where the specification of national capitals or economies is concerned.

Marx's own work is not free of such conundrums. For Marx, 'The world market itself forms the *basis* for this [capitalist] mode of production (1991: 451, emphasis added). And yet, the '*Establishment* of the world market' is also regarded as one of the 'Three cardinal facts about capitalist production' (p. 375, emphasis added). One way of addressing this issue of how the global can be both a precondition for, and consequence of, capitalism is by focusing on its origins in the emergence of capitalism itself, a subject on which Marx has much to contribute. But first, it should be observed that a methodological principle is involved, in that it is not simply a matter of logically deriving the relationship between the global and capitalism in abstract thought, but of rooting it in material processes for which history is the starting point. As Marx puts it, 'the modern mode of production ... developed only where the conditions for it had been created in the Middle Ages' (1991: 450). Indeed, for Marx (1993: 675):

> capital did not begin the world from the beginning, but rather encountered production and products already present, before it subjugated them beneath its process. Once in motion, proceeding from itself as basis, it constantly posits itself ahead of itself in its various forms as consumable product, raw material and instrument of labour, in order constantly to reproduce itself in these forms. They appear initially as the conditions presupposed by it, and then as its result. In its reproduction it produces its own conditions.

The world market was definitely picked up by Marx as one such condition or category. In particular, in the shifting relationship between the capitalist and non-capitalist worlds, as the former is emerging, gaining predominance and transforming the latter, the world market is both a precondition for such historical processes and is itself transformed by those processes, not least as more is produced and traded capitalistically.

Significantly, this can all be related to the prior dependence of the world market on the presence of trade or merchant's capital, which is one of the 'antediluvian forms of capital' (Marx, 1991: 728). And while merchant's capital is enabled 'to appropriate for itself a preponderant part of the surplus product: partly by acting as middleman between communities whose production is still basically oriented to use-value', it 'subjects production more and more to exchange-value by making luxuries and subsistence more dependent on sale than on the immediate use of the products' (p. 448, translation modified). Further, the dynamics involved are also made explicit (pp. 450–1):[2]

> whereas in the sixteenth century, and partly still in the seventeenth, the sudden expansion of trade and the creation of a new world market had an overwhelming influence on the defeat of the old mode of production and the rise of the capitalist mode, this happened in reverse on the basis of the capitalist mode of production, once it had been created. The world market itself forms the basis for this mode of production. On the other hand, the immanent need that this has to produce on an ever greater scale drives it to the constant expansion of the world market, so that now it is not trade that revolutionizes industry, but rather industry that constantly revolutionizes trade.

It is not just that capitalist commerce expands (with the production of surplus value and its realization through commodity-capital), but that non-capitalist production and commerce become integrated with, and determined within, its orbit.

This view of the world market—in part, the 'global' of the time—is important in that it differentiates Marx as a thinker from his contemporaries. As Gareth Stedman Jones (2007) correctly argues, Marx is in part a child of his time in that, like D. Diderot (1713–84), G. W. F. Hegel (1770–1831), J. B. Say (1767–1832), J. Mill (1773–1836) and many others, he looked upon the emergence of the 'world' as a pinnacle in the development of the material conditions of human life, notably made possible by revolutions in transport and communication from the 16th century onward. They could ponder the world-historical implications of these changes, even justifying the perpetration of violence by west Europeans as harbingers of 'civilization'.

But for Marx, the fate of such civilization lay less in speculative and cosmopolitan thinking and more by way of the laws of capitalism, with the world market as its result in all of its diversity of capitalist *and* non-capitalist forms. His extensive study of non-European and pre-capitalist societies should be assessed in this light. Significantly, Stedman Jones acknowledges that this entailed Marx's recognizing that capitalism would not sweep uniformly across the globe; but he incorrectly draws the conclusion that for Marx, this should have entailed his 'abandonment of *Capital*' as a consequence, for he perceives it to have been written in 'the universal and unilinear terms' he claims Marx largely shared with Enlightenment thinkers (Stedman Jones, 2007: 198). But this conclusion is hasty and lacks evidence. By contrast, in view of the broader intellectual project to which Marx was committed, study of non-capitalist societies represents a sharpening of Marx's long-standing 'global' standpoint by incorporating more determinations into the world market as opposed to homogenizing them into a single outcome. Instead of predicting the inevitability of the conquest and destruction of extra-European societies by Europe, Marx pays more attention to the transformation those societies experience once they are drawn into the world market where capitalist relations of production prevail (Marx, 1990: 345). In Marx's refined framework of analysis in *Capital* and later, these societies, or national economies in general, are viewed as particular moments in the reproduction of a differentiated capitalism (and not just capitals) on a global scale—a point Stedman Jones appears to fail to appreciate. Further, the existence and persistence of such differentiated societies in the world market requires an abstract theory of capital to be developed, in its different forms in production and exchange, in its different stages of development, and in the way these mutually coexist. In other words, not least as laid out in *Capital*, value theory provides the constituent elements of a theory of the world economy, but the elements can only be put together through incorporating a historical content.

In particular, this is the case in addressing the *international* or *global*, as opposed to the *national*. For this is not purely a theoretical matter, but reflects the way the capitalist world was formed and has evolved. As covered in the last part of the first volume of *Capital*, 'the colonies, the national debt, the modern mode of taxation, and the protectionist system' in the world market are offered as 'the chief moments of primitive accumulation' (Marx, 1990: 915). They demonstrate that the *global* dynamics of capitalist development were already in place as early as its formative stage. For the colonies, this is true not only in the sense of their role in resourcing primitive accumulation on the side of capital, but also in their playing a much more active role in production itself. As Pomeranz and Topik (2005: 226) emphatically argue, 'the first industrial factories were the sugar mills of the [colonial] Americas', in the 17th century, not Manchester cotton mills. According to this view, even if capitalist relations had emerged in western Europe, only in their colonies were some elements first put into practice. The colonial factories involved huge sums of money on top of 'some of the most sophisticated technology of the era, and a large workforce' (p. 227). Further, Sidney Mintz (1985: 51) highlights three *human* as well as *technical* elements that suggest that modern industrial (factory) production first appeared in the 17th-century Caribbean sugar plantations that were based on slavery, not free labour: discipline; efficiency-maximizing organization of the labour force; and time-consciousness. All are essential features of *capitalist* labour organization.

If it is an exaggeration to say that 'the factories of the Caribbean were holding a mirror in which Europe could see its industrial future' (Pomeranz and Topik, 2005: 228), certainly it was only after such periods of 'experimentation' with a factory system on the basis of slavery that its full-scale application was realized in 'mother' countries.[3] With commodities, finance and the organization of production itself derived from the colonies, the presence of the global prior to the national is evident at the birth of capitalism itself. As such, globalization is not a new phenomenon, as if the dream of the Enlightenment had only been realized today, albeit in the form of a nightmare. For national economies were from the outset formed in a global context, and each could only obtain its position vis-à-vis others in the world market (Hont, 2005).

The preceding discussion explains why Marx should take the world market as starting point, but, at the same time, abstract from its constituent elements. As he puts it himself (1990: 727n):

> We here take no account of export trade ... In order to examine the object of our investigation in its integrity, free from all disturbing subsidiary circumstances, we must treat the whole world as one nation, and assume that capitalist production is established everywhere and has taken possession of every branch of industry.

Initially, then, value analysis and the world market as a single nation are one and the same.

In this light, though, the 'world market' is something of a misnomer. To be sure, the most elementary and systematic form in which capitalism is constituted as a global economy (as opposed to violence and plunder) is through commodity relations (value formation across sectors). But these are combined out of very different modes of (commodity, in part, as opposed to capitalist) production, and equally diverse methods of production of different and shifting levels of productivity (value formation within sectors), from the factory system through to sweatshops. In short, the world market is the articulation of commodity production through competitive accumulation across a spectrum of producers, and is addressed as such by Marxist value theory (see Saad-Filho, 2002, for a full account of factory production).

By the same token, commodity relations are forged through the mediation of money so that world money itself is an elementary category that must prevail, irrespective of the forms and content that it assumes as it evolves in relation to the historical complexity of the world market. Once again, though, the nature of world money is both logical (significantly, it is able to be present in the opening chapters of Volume I of *Capital*) and, for the latter, not exclusively confined initially to a source of plunder as with primitive accumulation. Indeed, *Capital*, especially but not exclusively in Volume 3, offers an extraordinarily rich account of the development of money within exchange, with interest-bearing capital at its pinnacle as the form of money capital that underpins competitive accumulation through the broader credit system as a whole (which also incorporates commercial and personal finance).

Further, across the accumulation of capital in its money, productive and commodity forms (each with its own constituent elements), the state intervenes. It also develops economic forms of its own in taxation, monetary policies and instruments, and other policies that both facilitate (or even obstruct) and condition the pace and composition of capital directly (as in nationalized industries, for example) and economic and social reproduction (health, education and welfare, repression and reform, etc.). Again, logical and historical analyses complement one another, as a system of nation-states—and international relations more generally—draws upon, reproduces and transforms but is not reducible to the world market, even as this is itself reproduced historically, and in thought, in more complex and developed forms.

As argued in this vein in Fine and Harris (1979), value theory can be attached to a periodization of the world economy, through the sequenced internationalization of commodity, money and productive capital, with earlier dominant forms complementing the new as the latter emerge, and with the corresponding location of the state as an agent of economic and social reproduction. However, the current phase of capitalism, since the collapse of the post-war boom, has been characterized by the resurgence of finance, with financialization (and its broader expression as neoliberalism) tempering the pace of accumulation and progress in the economic and social conditions to which it is attached (see Fine, 2007, 2009a, for example). This involves not only the proliferation of financial markets themselves, but also the heavier penetration of finance into the restructuring of industrial capital (as with 'stakeholder value') *and* economic and social provision (most notably for pensions and housing finance, for example), with the corresponding form and severity of the current crisis being a result.

Irrespective of the veracity of this unduly brief perspective on the current configuration of values on the world market, the method is to proceed from such value analysis in its full development as laid out in *Capital* to the historical complexity attached to outcomes at disaggregated levels, such as the role of China, the USA, or the dollar. Here, on a longer view, the contrast with other approaches can be observed. Even though they may highlight crucial aspects of past or contemporary capitalism, the issue is one of locating these contributions appropriately within an analytical framework, for which abstract value theory is essential as the theory of the capitalist mode of production. For theories of the developmental state, for example, the order of analysis is reversed, and development (inevitably capitalist) is perceived to be the potential or actual result of adoption of appropriate policies without reference to the world economy except as a conditioning, not prior determining, factor. There is no acknowledgement of combined and uneven development, with an implicit presumption that all states could be developmental without the success of some being, in principle, contingent upon the failures of others. By contrast, for world systems theory, the world economy tends to be rigidly structured, precluding the possibility of successful capitalist development, despite unambiguous evidence to the contrary in light of East Asian NICs (newly industrializing countries) and, most recently, China, each of which have both reflected *and* transformed the world market.

Often, if often inadvertently and with major exceptions such as Lenin's *Imperialism*, the Marxist tradition has proceeded from the national to the international rather than vice versa. This has, in recent literature, enabled if not necessarily predetermined major errors in the interpretation of contemporary capitalism. Brenner, for example, is right to have sifted the empirical evidence both to point to the slowdown of accumulation over the period of financialization, and to show that this does not derive from working-class demands or rewards. But with his overhang hypothesis of investment constrained by incumbents (and excessive competition between blocs of national capitals, with the USA, Japan and Germany to the fore), he fails to acknowledge both the multiplicity of ways in which restructuring can take place through the levers of competition, and the extent to which restructuring has occurred, albeit in the context of slowdown.[4] Harvey's notion of accumulation by dispossession can also be seen to be an important aspect of contemporary capitalism but, again, its prominence is a consequence of the rise of financialization and the inertia it has imposed on accumulation through reinvestment of surplus value.[5] And Glyn's (2007) continuing approach of emphasizing international competition and real wages as being too high (at the expense of profitability) or too low (at the expense of realization) is useful in pointing to the impact of China on the world market (and vice versa). But, apart from underestimating the role of financialization (in potentially sustaining demand when wages and other expenditures are weak), this fails to acknowledge that (international) competition cannot lower the rate of profit for capital as a whole, as lower prices to producers who sell output means lower prices to those who buy it (or lower value of labour power). In these instances, cause is conflated with consequence, as is dramatically revealed by the acute shifts in position that have been taken on the Chinese economy—from a major competitor bringing down capitalism prior to the crisis to a potential source of recovery in its wake. The insertion of the Chinese into the world economy is considerably more complex than their being a source of cheap labour and of demand and supply (and as sump for US dollars to compensate for its trade deficit). Accumulation on a world scale is both more than, and different from, this.

Too much knowledge is dangerous

Knowledge, especially science and technology knowledge, plays an important role in Marx's theory of capitalism. The production of relative surplus value requires ceaseless innovation, mostly through the adoption of new production methods based on new technologies. The incorporation of science and technology into machinery is a precondition of the specifically capitalist mode of production, where mass production and commodity exchange are generalized. The generation and use of knowledge are socially constructed and determined. Indeed, for Marx (1990: 493), 'Technologies lay bare the process of the production of the social relations of [human] life'. But Marx does not provide a detailed study of knowledge, despite the rich historical and concrete accounts of machinery, concentrated in Volume 1 of *Capital* and scattered elsewhere throughout his work.

Specifically, if abstractly, Marx reveals the interrelation between knowledge and labour, not least as being one of conception and execution. As 'purposeful activity' (1990: 284), labour both presupposes and generates knowledge. Knowledge production or conception is the activity of constructing in the mind the idea of what is to be realized, and determines the 'purposeful will' of labour. Humanity is distinguished from other species in that conception precedes execution even when labour is simple. Knowledge signals an 'exclusively human characteristic'. At this level, the distinction between conception and execution has the following characteristics. First, this distinction is ontological. Despite feedback mechanisms such as learning-by-doing, conception always precedes execution but, in turn, can only be realised through execution. They are two distinct but interrelated moments of production. Second, the distinction as such, drawn at the most abstract level of analysis, is ahistorical, excluding any determinations specific to capitalism. A key question is that of how this distinction is developed and reproduced specifically under capitalism. Third, even at this (still abstract) level of the capitalist mode of production, the key issue is the role of knowledge in value production. Workers employed by capitalists to produce chairs do produce (surplus) value and have some knowledge of what they are doing. But does the labour that designs the chair produce (part of) the value of the chair, or not? Such knowledge labour is not the same as commodity-producing labour, in that design is reusable irrespective of the number of chairs produced—see below.

Initially, consider capitalist forms of cooperation in the labour process. For Marx (1990: 454), cooperation is 'the fundamental form of the capitalist mode of production'. In addition, cooperation is associated with both the formation of the collective power of labour and the tendency to separate production from the use of knowledge in the exercise of collective labour, corresponding to the separation of the conceptualization and execution of production. First, when different individual workers collaborate, they work together to achieve common goals.

Under cooperation, individual workers not only perform individual labours but the productivity of collective labour exceeds the sum of individual contributions both quantitatively (i.e. how much) and qualitatively (i.e. what can be achieved).

Second, in its simplest form, cooperation can take place by gathering workers together; but in most cases, cooperation involves the coordination and organization of the production process. Further, as labour becomes collective, so the knowledge and goals of labour also become collective. This gives rise to a group of workers that is more or less dedicated to the realization of these goals, and the coordination and adjustment of the production processes. Marx mentions the emergence of overseers in this context, but knowledge work as such is not identified. Rather, and equally within the Marxist tradition, emphasis is placed on coercion to create surplus value collectively, for which knowledge and supervision of labour-time as well as activity itself are essential. Third, though, skill consists of knowledge at the collective level as well as drawing on the skills of individual workers. Collective skill or knowledge cannot be reduced to a set of individual skills, since it includes knowledge that exists irrespective of individual workers, not least as embodied in fixed capital. Finally, the separation between conception and execution 'is completed in large-scale industry, which makes science a potentiality for production which is distinct from labour and presses it into the service of capital' (Marx, 1990: 482). In contrast to 'manufacture', which is based on handicraft and 'excludes a really scientific division of the production process' (p. 458), the proportion of collective (and other) skills tends to be marginalized from productive workers in machinery-based production. Science is incorporated into the labour process 'as an independent power' (Marx, 1991: 880).

In sum, in capitalism where production is based on cooperation, conception and execution are, necessarily imperfectly, detached from one another and infused with value relations. And the same incomplete detachment applies to conception itself, to the extent that it is removed from production and appropriated within the realm of science and technology as distinct from production. One notable consequence is that as knowledge production is monopolized by and centralized into a group of workers distinct from execution and even from the production itself, workers involved in the labour process are degraded and the labour process correspondingly transformed.

Such polarization of conception and execution, and its impact on waged work, have been the main theme of labour process theory. Braverman's (1974) notion of deskilling suggests that there is a tendency in capitalism to deprive workers of skills, fragmenting and sub-dividing work into a set of functions. 'Semi-artistic' workers in simple cooperation are transformed into partially skilled workers in manufacture (Marx, 1990: 504), and into versatile, unskilled workers in machinery-based production, 'to the level of an appendage of a machine' (p. 799). The deskilling thesis, however, has been criticized from a number of perspectives: that in some cases, it goes hand-in-hand with the emergence of new jobs requiring different kinds of skills than those of craft workers; that the notion of skill in Braverman is partial and takes craftworkers as ideal; that the broader social determination and construction of skills are neglected; that Braverman ignores the importance of consent and autonomy, as opposed to contestation, as part of capitalist and worker strategies; and that the corresponding role of subjectivity of workers and class struggle in the formation of the labour process is overlooked (Wardell, 1999; Meiksins, 1994). Marxist labour-process theorists have argued that deskilling is a tendential law, inherent in the capitalist mode of production as an underlying force (Hassard and Rowlinson, 1994, 2000; Spencer, 2000). Capital does mechanize and systematize skills in an attempt to increase labour productivity and to minimize the risk of sabotage. Not only is the separation between conception and execution never absolute, but it is continuously evolving and redefining what is and what is not recognized as skill, including the articulation with the specifically value-producing requirements of capitalism, from command in the workplace through to the attempts to ensure realization in the sale of commodities.

Where, though, does this leave knowledge production and use in relation to value theory? Take the example of automobile production. First, a new model includes the creation of the initial design, the building of a prototype, the testing and fixing of defects as well as market research, and so on. Only after this can mass production begin, to which other forms of knowledge work will be attached. This and all the labour expended before mass production comprise knowledge labour. While diverse in content and forms (including wage forms), all such labour produces no value. A key difference between knowledge labour and commodity-producing labour lies in the reusability of the product of knowledge labour (something that is not true, for example, of commercial labour, which also adds no value). Instead of producing value of commodities directly or indirectly through transfer of the value of the labour time contributed in a piecemeal fashion (like fixed capital), knowledge labour allows for 'intensified labour' (Marx, 1990: 435), creating the conditions for enhancing the productivity and/or complexity of collective labour, but without being a part of that collective labour in anything other than a formal sense.

Consider this in light of intra- and inter-sectoral use of knowledge labour. For the first, if an individual capitalist makes more productive use of knowledge than does the sectoral norm, the commodity-producing labour will have a lower individual value and be able to accrue extra surplus value over the norm in the form of higher profit. The comparison between labours in terms of productivity is possible in principle only when they produce the same commodity. In this case, if one has a higher labour productivity than another, this might be because of different use of collective knowledge or because of differences in the skills of individuals. Second, though, the sectoral average level of knowledge might be higher than the social average. In this case, commodity-producing labour of all the individual capitalists in this sector acts as intensified labour. The average labour of such a sector serves as complex labour and comprises 'intensified, or rather multiplied simple labour' (Marx, 1990: 135). For example, the labour of jewellers is complex and produces more value for a given labour time than does the simple labour of spinners. Complex labour produces more value precisely because it requires significant efforts in education and training, incorporating more knowledge than do other simple labours. As seen earlier, labour in capitalism is collective labour, and collective skill or knowledge is formed out of cooperation. Even if machinery dominates individual workers, workers use machinery as instruments of production at the collective level. Knowledge produced in its own (non-value) generation process serves, in the labour process, as the knowledge of the value-producing collective worker. Even if individual workers perform simple labour, collective knowledge can intensify that labour and raise value contributed at the sectoral level.

This interpretation of the contribution of knowledge labour to value production is drawn from the highly contested South Korean debate on the value and price of software or information goods (Kang et al., 2007). The central question is that of how the value of package software is determined, given that production simply requires the compiling and copying of source codes. One group of writers has argued that the value of package software is close to zero because the production of package software (i.e. the making of simple copies) requires little labour, but the price of package software is a high monopoly price. Another group has proposed a sort of cost approach in which the presumption is that value has been contributed by software design, and is shared across the individual packages sold. Based on the theoretical framework outlined in the previous paragraph, Jeon (2008, 2009) criticizes both of these approaches, arguing that labour expended to produce source codes does not create part of the value of software either directly or indirectly, but allows the labour expended for the production of package software to serve as intensified labour. The value of package software is higher than zero because labour expended for the production of package software acts as intensified labour even if the concrete (and simple) labour time expended per unit of package software is close to zero. Thus, labour that produces source codes is knowledge labour, and that producing package software from the source codes is commodity-producing labour. The peculiarity of software production is that company resources are almost completely dedicated to the knowledge production processes.

A very different view is taken of such developments by those who not only exaggerate their significance empirically, but also perceive them as defining the contemporary period as a distinct stage of capitalism. Thus, the emergence of the theory of cognitive capitalism coincides with the popularization of the notion of the knowledge economy, in which the production and dissemination of knowledge are believed to play central roles in redefining the economy. However, cognitive capitalism is to be distinguished from the knowledge economy. While theories of the knowledge-based economy (KBE) and the economics of innovation do address the same recent phenomena, most of the KBE theories are criticized as being technologically deterministic (Vercellone, 2004). Even if the quantitative growth of knowledge sectors is notable, it is not sufficient to explain or substantiate the establishment of a knowledge economy, considering that knowledge has always been important for production (Paulré, 2004). Rather, proponents of cognitive capitalism posit qualitative change in underlying social relations. A new form of conflict within the capital–labour relation is perceived to have emerged, marked by the hegemony of cognitive or immaterial labour and the corresponding rise of rent as the central economic category. Significantly, the theory bears many similarities with the post-workerism of Hardt and Negri. Both contend that at the heart of the profound transformation of capitalism lies the dominance of immaterial or cognitive over industrial labour, not least since the latter has become emptied of intellect content and application of knowledge, at least qualitatively if not quantitatively. While workers are responsible for both conception and execution, conception represents the dominant form of labour for cognitive capitalism.

From this starting point, the following conclusions are derived. First, labour becomes more autonomous from capital than before as workers appropriate the cognitive and intellectual dimensions of their work. Labour produces not only commodities but also communication, collaboration and relationships, being 'immediately social and common', and expanding 'the realm of what people share in common' (Hardt and Negri, 2004: 114). Further, labour becomes more collective than before as the production of knowledge depends on the existing stock of knowledge, itself the result of collective effort.

Second, the labour theory of value is seen as invalid or in crisis in the era of cognitive capitalism, despite the attempts of capital to continue to impose it. Labour remains the source of wealth, but it does so because labour produces immaterial products including knowledge. Considering that the value of knowledge, if such a thing exists, cannot be measured by the labour time expended to produce it, the labour theory of value allegedly no longer prevails or is of relevance.

Third, as the extraction of surplus value becomes less feasible, capital is forced to devise new systematic mechanisms of appropriating the products of living labour. Capital seeks to transform knowledge into intellectual property and, accordingly, appropriates surplus as rent. The distinction between rent and profit blurs, and capital is ever more parasitic (Vercellone, 2008a, 2008b; Negri and Vercellone, 2007). In short, new theory is necessary for the new capitalism (Moulier-Boutang, 2006).

Despite its focus on knowledge production, the theory of cognitive capitalism is flawed in several respects. Fundamentally, this is due to the rejection of Marx's value theory through erroneous interpretation. For the theory, cognitive or knowledge labour (conception) and industrial labour (execution) are understood to be two independent forms of labour. They may coexist, but one is seen to be dominant over the other. In this view, the necessary articulation between conception and execution is minimized, if not denied. Accordingly, the validity of value theory is argued to depend on which form of labour prevails; labour creates value and is relevant, but only if its industrial form is dominant. Then, the knowledge form of labour is deprived of any theoretical significance in this interpretation of value theory, especially for the way it contributes to value production, and it is confined instead to the functioning of capital and capitalists. When this is taken over by workers and itself becomes predominant, so value theory is rendered redundant, as is surplus value production itself, since capital has nothing to do other than to appropriate surplus product as rents on the basis of property rights. On the contrary, as seen earlier, knowledge plays an important role in value production per se, determining the productivity and complexity of labour. In sum, the theory of cognitive capitalism is wrong because of its dualistic approach, precluding diverse forms of the interaction between conception and execution in deference to the necessary predominance of one over the other.

As shown above, it is possible, even imperative, to extend value theory to incorporate the role of knowledge, marking distinctions across the variegated presence and role of knowledge in all value processes—the nature of its contribution to value production or not, and the presence of knowledge (such as intellectual property rights) and knowledge labour in commodity form, as opposed to value and surplus-value production. In this light, the strongest case that can be made against value theory in light of the knowledge economy would be if it could be demonstrated that (surplus) value production has been reduced to the status of an epiphenomenon—a proposition that can hardly be sustained given the continuing predominance of waged labour in the production process, including the production of knowledge goods; and quite apart from the heavy presence of other types of (waged) labour throughout the history of capitalism (if for functions other than those associated with knowledge as such, including those as varied as social control and speculative commerce). In any case, the current financial crisis is itself one of the knowledge economy in which the failure to produce and realize surplus value is at its most central. Possibly the most prominent example of the knowledge economy has been within finance, as much as within the software and media industries with which it interacts. And the excesses of finance demand the deployment, not the rejection of, value theory. In effect, the rejection of value theory for the knowledge economy is, as with so many other grand specifications of the contemporary world, to substitute more or less casual empirical observation around recent concrete developments for an analysis rooted in the continuing predominance of capital and capitalism. This is not to deny the expanded role of knowledge, however understood, but to situate it in relation to class and other relations that persist in their basic structures and processes.

Conclusion

Without having always made this explicit, our discussion of value through two examples—world market and knowledge—raises deep issues of method. How do we address the abstract and the concrete, the simple and the complex, the historical and the logical, the inner content and the external form, and so on? Without confronting such issues, whether explicitly or otherwise, it is inevitable that value theory should be perceived to lie somewhere between the inadequate and the erroneous. Whether it be the environment, gender, race and so on or the more traditional terrain of political economy around imperialism, crisis and uneven development, such issues cannot simply be reduced to value theory (which abstracts from them), but nor can they be satisfactorily addressed in its absence. Consequently, its continuing development both in abstract and in historical and concrete application remains imperative.

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Endnotes

1 See also the debate between Kincaid (2007, 2008, 2009) and Fine and Saad-Filho (2008, 2009). Note how the latter identify two major sources of complementary *supportive* misinterpretation, and often dismissal, of Marx: the intrinsic critique associated with Rubin (in which the exchange form of value absolves theory of the responsibility to trace the routes from production to circulation) and the extrinsic Ricardian critique (in which more concrete forms, starting with price but potentially unlimited in scope, are presumed to be incompatible with value).
2 See also Marx (1990: 918).
3 Debate on the active role of the colonial economies in the rise of capitalism was ignited by the publication of Eric Williams's *Capitalism and Slavery* in 1944. See Solow (1987) for a critical overview.
4 Significantly, dos Santos (2009) and Lapavitas (2009) do emphasize financialization, giving financial exploitation or the expropriation of wages as a leading element in the crisis. This appears to represent a divergence from Marx's value theory, and it displays an anomaly in that the slowdown is not explained and appears to become inexplicable as, with Brenner, not only are workers unduly exploited in light of stagnant real wages but, in addition, they are also exploited by finance as well within exchange. Taken together with neoliberal command of the state, it is inconceivable how circumstances could otherwise be more favourable to capital accumulation. See Fine (2009b) for a critique.
5 See Fine et al. (1999, 2005) on Brenner, and Fine (2006) on Harvey.

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