

# Technology as Fetish: Marx, Latour, and the Cultural Foundations of Capitalism

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## Abstract

This article discusses how the way in which post-Enlightenment humans tend to relate to material objects is a fundamental aspect of modern capitalism. The difficulties that conventional academic disciplines have in grasping the societal and political aspect of ‘technology’ stem from the predominant Cartesian paradigm that distinguishes the domain of material objects from that of social relations of exchange. This Cartesian paradigm has constrained the Marxian analysis of capital accumulation from extending the concept of fetishism to the domain of technology. Both Marxian and mainstream thought represent technological objects as empowered by their intrinsic properties, which derive from human ingenuity and tend to progress over time. To transcend this paradigm will be possible only through the kind of post-Cartesian perspective on material artefacts that has been championed by Bruno Latour. However, Latour’s own neglect of technological systems as social strategies of exploitation reflects his lack of concern with global inequalities.

## Keywords

capitalism, Cartesian objectivism, fetishism, Latour, Marx, technology

## Introduction

This article discusses how the specific way in which post-Enlightenment humans tend to relate to material objects is a fundamental aspect of modern capitalism. On one hand, it argues that the rationale of most new technologies since the Industrial Revolution has been to appropriate and redistribute (human) time and (natural) space – embodied labour and embodied land – in the world-system. The concept of time-space appropriation thus offers a way to define and even quantify asymmetric

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global flows of resources that are fundamental to the accumulation of physical capital. On the other hand, it argues that the difficulties that conventional academic disciplines have in grasping this societal and political aspect of 'technology' stem from the predominant Cartesian paradigm that distinguishes the domain of material objects from that of social relations of exchange. This Cartesian paradigm has constrained the Marxian analysis of capital accumulation from extending the concept of fetishism to the domain of technology. Instead, Marxian discourse is generally aligned with mainstream thought in representing technological objects as empowered by their intrinsic properties, which derive from human ingenuity and tend to progress over time. The historical and contemporary mystification of the exploitative aspects of many modern technologies thus ultimately implicates their cultural dimension.

'Technological progress' emerges as a cultural concept reflecting the historical experience of privileged sectors of world society. Paradoxically, the modern (Cartesian) aspiration to achieve power over objects (and objectified Nature) has generated an unprecedented human *submission* to objects. I shall argue that the Marxian concept of fetishism remains supremely useful as a way of understanding the political economy of human-object relations, but that its (crucial) extension to a reconceptualization of modern technological systems will be possible only through the kind of post-Cartesian perspective on material artefacts that has been championed by Bruno Latour. It appears, on the other hand, that Latour's own inability to recognize technological systems as social strategies of exploitation, while obviously not due to epistemological constraints, reflects his lack of concern with global inequalities of economy, technology, and environment.<sup>1</sup>

The article thus aims to reconnect the discourse on fetishism, the main thrust of which has become largely restricted to exploring personal phenomenologies of aesthetic or sensuous experience (cf. Apter and Pietz, 1993; Spyer, 1998; Mitchell, 2005), to a general critique of global capitalist relations. The ambition here is not to attempt to review the voluminous discourses on fetishism, animism, epistemology, magic, materiality, technology, or consumption, but to bring together a few essential insights from these various topics to suggest new ways of illuminating some cultural dimensions of modernity and capitalism. More specifically, the goal is to combine some relevant perspectives from cultural anthropology with perspectives from political economy, world-system analysis, and ecological economics in order to 'defamiliarize' (Marcus and Fischer, 1986) our everyday understanding of technology. Intended primarily as a theoretical contribution, the discussion only occasionally touches on empirical anthropological reference-points, ranging from early British textile factories and the Luddite movement to indigenous Amazonian animism and ancient Andean ritual.

## Expanding the Marxian Concept of Fetishism

Karl Marx (1867: 164–5) famously observed that relations between people in capitalist society assume the form of relations between things:

[T]he relationships between the producers . . . take on the form of a social relation between the products of labour. . . . It is nothing but the definite social relation between men themselves which assumes here, for them, the fantastic form of a relation between things. In order, therefore, to find an analogy we must take flight into the misty realm of religion. There the products of the human brain appear as autonomous figures endowed with a life of their own, which enter into relations both with each other and with the human race. So it is in the world of commodities with the products of men's hands.

The fetishism of money and commodities thus obscures the social foundation of these objects, as a result of the alienating split between people and the products of their labour. It simultaneously animates such things, by attributing to them autonomous value, productivity, or growth. To deconstruct fetishized human-object relations such as these, in order to reveal underlying social asymmetries, can be a powerfully subversive analytical strategy. It helps us to understand phenomena as diverse as the pervasive desire for consumer goods and the violence of physical sabotage (iconoclasm). Ultimately, it provides a radically alternative perspective on the economic, political, and environmental inequalities of global society.

In order to seriously challenge those global inequalities, we would have to open our eyes to the social relations underlying modern technologies. Modern technological objects (here referred to as 'machines'<sup>2</sup>) are basically also inanimate things attributed with autonomous productivity or even agency, obscuring their own foundation in asymmetric global relations of exchange. Over the past 20 years I have been arguing that the Marxian concept of fetishism can be extended from our understanding of money and commodities to explain how we tend to be deluded by modern technologies (Hornborg, 1992, 2001a, 2001b, 2009, 2011). All three categories of objects (money, commodities, and machines) are fetishes in the sense that they mystify unequal relations of exchange by being attributed autonomous agency or productivity. The mainstream interpretation of modern technology, however, is that it is an index of human progress over time, even as a gift to humanity from the wealthier nations of the world. This view of technology qualifies as a 'world view' in Kearney's (1984) sense. As it is fundamental even to a Marxian perspective, it poses a peculiar contradiction to social science drawing on Marx's analysis of capital: How can capital, once it assumes the form of technology, become exempt from political critique?<sup>3</sup>

An alternative and more critical interpretation is that modern technology is largely an index of accumulation, rather than ingenuity in itself, and that its capacity to locally save time and space occurs at the expense of (human) time and (natural) space lost elsewhere in the world. This can be illustrated by calculations showing that the Industrial Revolution in England was founded on 'time-space appropriation', a concept which combines the Marxian focus on the unequal exchange of embodied labour with more recent ecological concerns with the unequal exchange of embodied land (Hornborg, 2006a). In selling £1000 worth of cotton textiles on the world market in 1850, and purchasing cotton fibre for the same amount, a British factory owner was able to exchange the product of a smaller number of hours of British labour for that of a larger number of hours of less expensive (mostly slave) labour in overseas cotton plantations. In terms of space, the same market transaction implied the appropriation of the annual yield of almost 60 hectares of inexpensive agricultural land overseas in exchange for the space occupied by a British textile factory. This incentive to increase appropriation by expanding production was the global context of the steam engine, and the economic rationale underlying the shift to fossil fuels. It locally saved time and space, but at the expense of human time and natural space elsewhere in the world-system.

The rationale of mechanization is inextricably intertwined with global differences in the prices of labour and resources. If the African slaves harvesting cotton fibre on the colonial plantations had been paid standard British wages, and the owners of New World soils had demanded standard British land rent, industrialization would simply not have occurred. The existence of modern technology, like the lucrative trade in spices, silver, or beaver pelts, is founded on strategies of conversion between different parts of the world market, where labour and land are differently priced.<sup>4</sup>

These perspectives should change our ways of writing history, particularly environmental and economic history, but ultimately also the history of technology. Not only must Europe and the 'West' be dethroned as intrinsically generative of economic growth, modern technology and civilization, but these phenomena must in themselves be recognized as contingent on specific global constellations of asymmetric resource flows and power relations. In other words, not only was the 'rise of the West' a geographical coincidence of world history – the location of Europe as middleman between the Old and New Worlds (cf. Blaut, 1993, 2000; Frank, 1998; Pomeranz, 2000) – but its economic, technological, and military *means* of expansion, generally viewed as European 'inventions' and as contributions to the rest of humanity, were products of global conjunctures and processes of accumulation that coalesced after the economic articulation of the Old and New Worlds. The very existence of industrial technology has thus from the very start been a global

phenomenon, which has intertwined political, socio-economic and environmental histories in complex and inequitable ways. Technological rationality is never disconnected from the global distribution of purchasing power. If historical hindsight helps to clarify this generally neglected fact, the next challenge must be to spell out its ramifications for our perceptions of economic growth and technological progress today.<sup>5</sup> We need to understand that technology is not simply a relation between humans and their natural environment, but more fundamentally a way of organizing global human society.<sup>6</sup>

In order to understand fetishism as a simultaneously cultural and political phenomenon ultimately implicating macro-scale power structures at the global level, we first need to consider the spectrum of ways in which humans can relate to other beings and other things in their surroundings. We begin by discussing the fundamental contrast between animism and objectivism. Although it may seem remarkable today that Karl Marx was optimistic about the new technologies that in the 19th century enslaved the masses at home and abroad in the interests of British capital, we must recall that, in some respects, he was irremediably constrained by Cartesian objectivism.<sup>7</sup> For Marxian analyses of capital accumulation to progress, it will be necessary for it to relate to the past several decades of critique against Cartesianism, even if it should imply concessions to decidedly anti-Marxian approaches such as those of Bruno Latour (1993, 2010).

### **Animism versus Objectivism: Modernity as Dissociation**

The topic of animism continues to intrigue modern people. What, then, do we mean by ‘modern’? As a number of social theorists (e.g. Latour, 1993) have suggested, the social condition and technological accomplishments of European modernity have been founded on a categorical distinction between Nature and Society. It is by drawing a boundary between the world of objects and the world of meanings that the modern project has emerged. By, as it were, distilling Nature into its material properties alone, uncontaminated by symbolic meanings or social relations, modernists have been freed to manipulate it in ways unthinkable in non-modern contexts. Objectivism thus suggests a kind of moral or emotional dissociation from that part of reality classified as object.

Animism suggests the very antithesis of this objectifying modern stance. Yet it is not a phenomenon that can merely be relegated to a previous period in human history. As Descola (1994), Bird-David (1999), Ingold (2000), and other anthropologists have shown, many contemporary people who are intimately engaged in gaining their subsistence from local ecosystems continue to approach their non-human environments through what is now being called a ‘relational’ stance. Entities such as

plants or even rocks may be approached as communicative subjects rather than the inert objects perceived by modernists.

We might approach the diversity of human-object relations from the perspective of what Latour (1993: 101–3) has called a ‘symmetric anthropology’: an anthropology that does not merely represent an urban, modern perspective on the non-moderns in the margins, but that is equally capable of subjecting modern life itself to cultural analysis. This ambition is often presented as a central rationale of anthropology (e.g. Marcus and Fischer, 1986; Gudeman, 1986), but is easier said than done.<sup>8</sup> I turned to Latour (1993) after I had heard from colleagues that he, too, wanted to show how the inexorable, material reality of modern science and technology was in fact a fabrication guided by social interests. I must admit that it was with considerable frustration that I managed to retrieve this general stance from a discourse that struck me as tortuously imprecise, but Latour being a mega-star, I suppressed my hesitation and found it appropriate to acknowledge the convergence (Hornborg, 2006b). My continued reading of his work has been disappointing to the point where I would agree with David Bloor (1999: 97) that Latour’s reasoning frequently ‘looks like a formula for imposing confusion on ourselves: it is obscurantism raised to the level of a general methodological principle’. But although it is legitimate to ask why the intellectual stardom of certain French philosophers tends to be proportional to the difficulties their readers have in deciphering them, it is incumbent on us to ask what Latour is basically saying, why it has attracted so much attention, and to what extent it can enhance our understanding of the human predicament.

Would modernity be impossible in a world where living things are consistently recognized as subjects? Latour’s answer seems to be yes. It is only by severing or submerging our capacity for relatedness that we are set free to impose our modernist designs on the world. To make this point, Latour refers to Descola’s (1994) suggestion that traditional societies of Amazonia retain their relative inertia – compared to Europe – precisely because their conception of the non-human environment remains embedded in their moral conception of society (Latour, 1993: 42). Animism, to Descola, is the projection of social metaphors onto relations with the non-human world. In not separating Nature and Society, Amazonian Indians like the Achuar automatically embed their ecological practice in a compelling moral system. For centuries, mainstream European society has refused to be thus constrained, and this liberation of capitalist modernity has been founded on the incommensurable distinction between Nature and Culture.<sup>9</sup>

Surrounded by philosophers and sociologists of science such as Latour announcing the end of Cartesian objectivism and acknowledging the extent to which human meanings infuse the material world, many anthropologists discussing animistic understandings of nature now take

them more seriously than a generation ago. But rather than going native, or adopting some version of New Age spirituality, we need to analytically sort out what epistemological options there are, and to ask if 'pre-modern', 'modern', and 'post-modern' people tend to deal with subject-object relations in different ways. Or rather, we could ask if these controversial categories can in fact be defined in terms of distinct varieties of subject-object relations.

The object – in the sense of a material, intrinsically meaningless, but essentially knowable reality – appears to be a thoroughly modern invention. Whichever interpretative schemes were conventionally adhered to in pre-modern societies, they enjoyed a kind of authority that modern knowledge rarely achieves. It is the predicament of modern people to remain chronically uncertain about the validity of their own representations. This modern condition of reflexive uncertainty can either be harnessed in the production of new but provisional certainties (as in science) or assume the form of solipsism, disengagement, and indifference. The latter alternative is what we have come to know as the post-modern. It is a condition where the exhausting attitude of chronic scepticism tends to give way to a kind of resigned gullibility. All hope of certainty has vanished, but precisely because no pretence to power or truth can be admitted, any pretence is as good as any other. As in the pre-modern condition, a sign is again naively perceived as an index of identity – rather than an arbitrary symbolic convention demanding to be challenged – but now simply by virtue of positing itself as such, rather than because of an assumed correspondence with some underlying essence. This post-modern abandonment of essence is what Baudrillard (1975) has aptly called the 'autonomization of the signifier'.<sup>10</sup>

The problem with objectivism – as unimaginable for the pre-moderns as it is unacceptable for the post-moderns – is the notion of a kind of knowledge that is not situated as part of a relation. By posing as disinterested representation, decontextualized from any political aspirations, modernist knowledge production suggests a relinquishment of responsibility, but in fact serves – through technologies – to set the instrumental rationality of the powerful free to go about its business in the world. But the post-modern mirror-image of objectivism – that is, relativism – certainly fares no better in terms of responsibility. Both these epistemologies have been spawned by the same, modern subject-object dichotomy. The division into natural versus human sciences, pitting realism against constructivism in Western knowledge production, remains a projection of this fundamentally existential, dualist scheme. The former takes the represented object as its point of departure, the latter the constructing subject, but neither acknowledges their recursivity, i.e. their relation.

Latour challenges Cartesian subject-object and Culture-Nature dichotomies in different ways, some of which are pertinent and some

downright ‘sloppy’ or at least ‘incoherent’ (Bloor, 1999: 87, 103). For the purposes of the present discussion, i.e. regarding the morally and politically non-neutral operation of modern technologies, it will suffice to emphasize a fundamental strength and a fundamental weakness of Latour’s position. A strength is his capacity to perceive even the most incontrovertible understandings and efficacious practices of science and technology as human *fabrications* or ‘factishes’ that are comparable to pre-Enlightenment ‘fetishes’ (Latour, 2010). To use a terminology that Latour himself would probably reject, modern constellations of artefacts, actors, and understandings represent socio-cultural constructions that are potentially as susceptible to deconstruction as the pre-modern constellations which modern people believe they have definitively transcended. This counter-intuitive critique of the fruits of Enlightenment is very much in line with my suggestions on ‘machine fetishism’ (Hornborg, 1992).<sup>11</sup> If Karl Marx would have had access to such post-Cartesian insights, he would probably have been more hesitant in his praise of technological progress. A glaring weakness of Latour’s social science, on the other hand, is his next to total indifference to ‘questions of power, gender, culture and ecology’ (Harris, 2005: 174; cf. Winner, 1993: 431).<sup>12</sup> The ideological bottom-line of his deliberations may well be his dismissal of ‘the tedious resentments of anti-imperialism’ (Latour, 2010: 34). If Bruno Latour would have shared the political engagement of Karl Marx, or of the myriad social and environmental justice activists who have followed in his footsteps, his analyses of technological systems would have revealed not only social networks but *exploitative* social relations embodied in the artefacts.

When Latour (2010: 13–15, Figs 2–4) attempts to communicate the core of his ‘symmetric’ argument on the universality of the fetish/factish, he reveals a striking lacuna in his deliberations on the relations between humans and objects. His concern here, it seems, is exclusively with the consequences of human actors’ understandings of their interaction with objects, rather than with the role of objects as *mediators* of human interaction. Whether actors are ‘free’ or ‘dominated’ by objects, however, is generally not so much a matter of their own perceptions as of their positions within social systems in which the exertion of dominance is delegated to objects of various kinds.<sup>13</sup> This omission is particularly surprising when identified in a writer who is known as a leading proponent of the insight that material artefacts have agency.

## Fetishism and the Cultural Analysis of Capitalism

If modernity is founded on the rejection of animism and the objectification of Nature, as Latour (1993) has argued, it seems paradoxical that animation is in fact fundamental to the Marxian concept of fetishism, which in itself is central to modern capitalism (cf. Marx, 1867;



Friedman, 1974; Taussig, 1980; Pietz, 1985–88, 1993, 1998; Miller, 1987, 2005; Ellen, 1988; Hornborg, 1992, 2001b). It is thus important to ask how animism relates to fetishism. There is a crucial difference between representing relations between people as if they were relations between things (capitalist fetishism), and experiencing relations to things as if they were relations to people (animism and pre-modern forms of fetishism<sup>14</sup>). The former is an ideological illusion underpinning capitalist political economy, the latter a condition of phenomenological resonance. We should probably further distinguish between the animation of living things such as trees (animism, more narrowly defined) and that of non-living things such as stones or machines (that is, fetishism, generally defined).<sup>15</sup> Cartesian objectivism and fetishism here emerge as structural inversions of one another: the former denies agency and subjectivity even in living beings, whereas the latter attributes such qualities to inert objects. In this framework, a more strictly defined category of animism would be reserved for the intermediate and quite reasonable assumption that all living things are subjects, i.e. equipped with a certain capacity for perception, communication, and agency. Animism, fetishism, and objectivism can thus be understood as alternative responses to universal human problems of drawing boundaries between persons and things.

Perhaps some of these problems can be alleviated by recognizing the difference between drawing boundaries in an analytical and an ontological sense, respectively. Latour would deny us the use of concepts denoting a subject-object distinction, but, as cogently argued by Bloor (1999), such a conclusion merely confuses matters. We can probably all agree with Latour that Nature is continually being intertwined with Culture or Society in our landscapes, our bodies, and our new hybrid technologies, which obviously invalidate ontological versions of the Cartesian dichotomy. But does this mean that the categories of Nature and Culture, or Nature and Society, are obsolete and should be discarded? On the contrary, never has it been more imperative to maintain an *analytical* distinction between the symbolic and the pre-symbolic, while acknowledging their complex interfusion in the real world. Only by keeping Society and Nature *analytically* apart can we hope to progress in the demystification of that hybrid web in which we are all suspended, and which more than anything else obstructs our pursuit of relatedness: the realm of animated objects that we call 'technology'. We more than ever need to retain our capacity to distinguish between those aspects of technology that derive from Nature and those aspects that derive from Society. The Laws of Thermodynamics and the political economy of oil prices require completely different analytical tools. To deny that Nature and Society need to be distinguished in this way, as Latour could be expected to do, would be indefensible.

What is sometimes referred to as the 'anthropology of technology' comprises some interesting attempts to explore the interface of culture

and materiality, but the field tends to be conspicuously detached from considerations of global political economy (cf. Pfaffenberger, 1992; Latour, 1996; Ingold, 2000). For instance, both Latour and Ingold are preoccupied with the dubious modern distinction between persons and objects and between Culture and Nature, both recognize that this distinction is paradoxically itself cultural (cf. Latour, 1993: 99; Ingold, 2000: 42), and both keep returning to the phenomenon of modern technology as an arena where the distinction becomes blurred or at least problematic, but neither of them is concerned with how this very arena is itself a manifestation of global rates of exchange. Now that it is epistemologically much more feasible than in Marx's time for philosophers of technology to say that technologies *are* exploitative social strategies, it is ironic that they should ignore such exploitative social relations. Even when technologies are understood as aspects of social relations, in other words, they will not appear to be exploitative unless global society is perceived as such.

There is definitely something about the general concept of 'technology' that seems to mystify us, both as social scientists and as citizens. On one hand, modern technologies often appear to be strategies for capacitating an affluent minority of the world's population through an asymmetrical exchange – an expanding net appropriation – of resources from the rest of the world (Hornborg, 1992, 2001a, 2006a, 2009, 2011). On the other hand, technologies are generally represented as politically innocent and intrinsically productive unions of human inventiveness and the pure material essence of Nature – indeed as gifts of the wealthier, developed nations to the rest of humanity (Adas, 1989, 2006; Marsden and Smith, 2005; Friedel, 2007; Headrick, 2010). How are these two contradictory images of technology able to coexist, without the former contaminating the latter?

Drawing on Latour, we might suggest that the answer lies in the rigid categorical distinction between Nature and Society, between the world of pure objects and the world of human relations. Once classified as object, technology is automatically immune to political critique, even for Marx and most of his followers. For how could pure objects be conceived as sources of malign agency? If the behaviour of the early 19th-century Luddites today strikes us as odd, we might reflect, it is because they were not yet quite modern. Today we supposedly know better than to direct our emotions at machines. The efficacy of technology, we hold, comes from 'objective properties intrinsic to the nature of things' (Latour, 1993: 51). Like economic rationality and scientific truth, says Latour, technological efficiency 'forever escapes the tyranny of social interest' (1993: 131).

But if these modernist convictions were to collapse, and we were to realize the extent to which our technologies are in fact politically constituted, our machines would cease to present themselves as pure objects

and conceivably be accredited with a malicious agency far surpassing that of any pre-modern fetishes.<sup>16</sup> From having been fetishized into politically neutral, autonomous agents, they would emerge as social machinations. To expose the agency of these cornucopian ‘productive forces’ as a transmutation and deflection of the agency of other humans would be to render morally suspect that which modernity had couched in the deceptive neutrality of the merely technical.

## Fighting against Machines

Machines were objects of political violence two hundred years ago, in early industrial England, through the activities of the so-called Luddite movement (Sale, 1995; Fox, 2002; Binfield, 2004; Jones, 2006). This short-lived movement created considerable turbulence in the heartland of early British industrialization (the counties of Yorkshire, Lancashire, Cheshire, Derbyshire, and Nottinghamshire) from late 1811 to early 1813. Thousands of local, proto-industrial textile workers who had seen their livelihoods eclipsed by the large-scale machinery of factories perceived these new buildings and their technologies as immoral contraptions violating traditional principles of justice and fairness. The embittered workers who suffered dwindling incomes and unemployment responded with revolutionary fury. Their response, which may then have appeared somewhat less futile than it does today, was to attack and destroy the machines themselves. In slightly over a year, damages to technological infrastructure exceeded £100,000, and many factory owners were attacked and injured.

Did the Luddites in 1811 really perceive sabotage of machinery as a possible way of intervening in the logic of capitalism? Or were they driven by the same kind of iconoclastic rage that has repeatedly prompted embittered people to destroy the fetishized monuments and images (the ritual ‘technologies’) of pre-modern elites such as those of ancient Rome, the 10th-century Maya, or Easter Island? Are the two incentives in fact inseparable? Whatever the case, historical hindsight suggests that theirs was simply not a feasible strategy. Sale (1995) aptly titled his book *Rebels Against the Future: The Luddites and Their War on the Industrial Revolution*. The social project of physically destroying machines, however, deserves reflection.

In directing their anger at these mechanical objects, the Luddites can be said to have engaged in a form of fetishism, if we define fetishism as the attribution of agency to non-living things. On closer consideration, however, the main difference between their view of machines and that of modernists is that the latter tend to find their presence beneficial, whereas the Luddites didn’t. The comparison exemplifies Latour’s (2010) observations on the affinity between ‘iconophilia’ and iconoclasm. Modernists tend to be no less convinced that technologies are

empowered by their intrinsic, non-societal properties. Machine fetishism is thus an affliction of Luddites and modernists alike. As dramatically illustrated by the 2001 attacks on the World Trade Center in New York, physical sabotage against modern infrastructure, in merely inverting the signs, has not been a viable strategy for subverting modern power. Loving and hating the machine are epistemologically equivalent varieties of fetishism.

The concept of fetishism as used by Karl Marx helps us to see how human relations to objects are ultimately about their relations to other humans. From this point of departure, David Graeber (2001, 2007, 2011) has used ethnographic material from comparative anthropology to challenge mainstream modern conceptions of economy and power. In pursuing such a strategy, he is following in the footsteps of Marx himself, who in fact pioneered Latour's (1993) 'symmetric anthropology' by turning the notion of fetishism back on Europeans attributing it to exotic Others.<sup>17</sup> It seems that relations of social power are more or less universally mediated by fetishized objects (cf. Friedman, 1974; Taussig, 1980; Godelier, 1986; Bloch, 1989).

Viewed in this light, it is revealing to see how closely related capitalism is to slavery (Graeber, 2007: 85–112). The commoditization of abstract human labour power achieved something prototypically modern by dissociating (Karl Polanyi or Anthony Giddens would have said 'disembedding') productive activity from all other aspects of human life. In thus systematically alienating human beings from the products of their labour, these systems make it possible for the extracted agency or life-force of human workers to be appropriated by others in the form of objects representing congealed abstract labour. This is the foundation of Marx's concept of commodity fetishism and in itself a powerful step toward a cultural deconstruction of the naturalness of capitalism. The abstraction of labour power is a means of transforming human energy into profits, or capital.

But the analysis can be pushed even further, for, as we have noted, Marx was not a Luddite. The very tangible, material operation of what we think of as modern technology is no less than commodities an embodiment of the deflected agency or life-force of human workers. Every 'technological' solution is ultimately a social relation in the sense that it will have implications for the societal distribution of the burden of problem-solving. The car or computer that may save its owner time represents losses of time for the myriad workers (such as in mines or oil fields) whose congealed labour it represents. Moreover, to the extent that modern technologies make possible a more efficient use of urban or agricultural space, for those segments of global society who can afford it, it is important to consider that they may represent losses of natural space (such as for strip mines or oil fields) elsewhere on the planet.

## Machines, Magic, and Power

In struggling to grasp and communicate the magnitude of our failure to perceive the political dimension of technology, I have found no better framework than the Marxian concept of fetishism (Hornborg, 1992, 2001b). As also Graeber (2001: 239–46) has recognized, this concept immediately prompts us to consider the issue of magic.<sup>18</sup> Magic and power share a similarly hybrid position between scam and efficacy. There is an important sense in which the seemingly inexorable, material logic of the capitalist world order ultimately rests on the beliefs and conceptions of its participants. If restricted to the psychology of financial collapse, this is quite obviously true. But I would seriously argue that even technological efficacy is cognate to magic.<sup>19</sup> I have repeatedly found that the quickest way to communicate what I mean by the concept of machine fetishism is to compare modern technology with the magical ‘soup stone’ of European folklore.<sup>20</sup> In transferring attention from the wider context to its imaginary centre, the stone in the soup is the prototypical fetish. Fetishized objects are in an important sense constitutive – not just misrepresentations – of accumulation and power. They are visualized as intrinsically generative or productive, and they are indeed responsible for processes of accumulation, but only by orchestrating them, whereas this orchestration itself hinges precisely on obscuring their social basis in unequal exchange. No more than the stone contributed to the soup is a fetishized sacred king like the Inca emperor the source of his people’s affluence (Godelier, 1986; Hornborg, 2000). Similarly, the industrial machine (i.e. the technological object) is but a fetishized node in a global system of resource flows. If those flows were to cease, the machine would grind to a halt.

Now that I have said that modern technology works like magic, I suppose it is incumbent on me to clarify the difference between them. What is the difference between the efficacy of magic and the efficacy of the machine? This question is simultaneously the question of how pre-modern sacred and ritual power could be transformed into modern economic and technological power.

Pre-modern power is cognate to magic because both rest on the premise that illusions actually do work. For example, the import of fetishes such as *Spondylus* shells to ancient Cuzco helped the Inca court to convince the emperor’s ten million subjects that his ritual communication with his father *Inti* (the Sun) was the prerequisite of agricultural productivity, and that it was entirely appropriate for them to reciprocate by spending significant amounts of their time working his fields and building his terraces (Murra, 1975; Godelier, 1986). The illusion no doubt *worked* in the sense that the metabolism of the Inca empire in part hinged on the flow of red oyster shells from Ecuador to Cuzco. It was ultimately dependent on the trade of pre-modern prestige goods along the west coast of South America,

through which merchants were able to acquire *Spondylus* in exchange for other objects coveted in Ecuador, such as packs of axe-shaped pieces of copper (Shimada, 1987). This trade, in turn, hinged on the cultural valuations which determined the rates at which copper could be exchanged for *Spondylus* (Rostworowski, 1977; Salomon, 1986; Hornborg, 2000).

Industrial technology, no less than theocratic ritual, is dependent on pivotal exchange rates (e.g. oil prices). The difference is that, in industrialism, the transformation of imports into work has been locally objectified (into technology) so as to seem entirely material and non-social. But what has actually happened is that the pivotal evaluative moment has been shifted from the local to the global level. Locally, it has been delegated to the non-negotiable, kinematic logic of machines, but these are in themselves manifestations of global exchange rates. In ancient Peru, what were imported over longer distances were primarily symbols, which were ritually convertible into work in the form of manual labour. The productive potential on which the system was based was still local labour, and the rate at which prestige goods were converted into work was to some extent negotiable. But in modern industrial centres, it is increasingly the productive potential itself that is imported, which means that the imports are *physically* convertible into work, and that it is the global rather than the local conversion rates that ultimately determine the feasibility of accumulation. No less than ritual, machines mystify us by pretending to be productive independently of exchange rates. In modern capitalism, however, the mystified exchanges have become even more opaque than in pre-modern ritual, and the magic agency of fetishized objects has become compelling in completely new ways.

Modern power relations based on economic and technological accumulation are thus, like pre-modern power, dependent on the ability of social elites to extract obedience and labour energy from the myriad human beings who provide them with the means of asserting these demands, and for this reason remain dependent on monopolies on legitimate coercion. They continue to operate only as long as the people they control can be persuaded, by magic and/or coercion, to subscribe to the claims to power offered by the elite. At this moment in history, these claims hinge, for instance, on the promises of continued economic and technological growth, and of global sustainable development. Perhaps most centrally, they hinge on the promises of technology.

History tells us that, in the long run, coercion alone will never suffice to maintain a power structure, rendering magic superfluous. The technological infrastructure accumulated in certain areas of the world unevenly illuminates nightly satellite images. For the operation of the current global order to continue, it is no doubt essential that the billions of people whose daily labour maintains the asymmetric flows of energy and matter to these areas do not recognize, in the objects composing that infrastructure, the products of their own life-force.

## **Conclusion: Consumption as a Transformation of Cannibalism**

The concept of ‘consumption’, to the extent that it implies destroying purchased physical resources in the process of creating meaning, highlights how that which capitalism would have us maximize is ultimately destroying the planet. While there is no exemption from entropy – whatever the mode of production – the specificity of capitalism lies in its relentless pursuit of ever higher rates of resource destruction (Georgescu-Roegen, 1971). It is only by acknowledging the material, biophysical dimension of the global economy that we can resist the seductive neoliberal glorification of consumption as the right to creative self-expression.

Marshall Sahlins’ (1976) useful elaboration of Baudrillard (1972) taught anthropologists to view commodities as elements of semiotic systems that shoppers sought to incorporate into their selves, as the consummation of culturally constituted desires. Such consumer desires are potentially infinite and quite possible to manipulate. Clearly, it is this latter dilemma that raises the most incisive doubts about capitalism. For if profits are proportional to our creative destruction of resources, it means that marketing will be geared to fabricating increasingly arbitrary incentives for us to maximize such destruction.

If we follow Marx in understanding the commodities we consume (i.e. metaphorically eat) as *embodiments* of other people’s life energy, not only is capitalism a transformation of slavery, as Graeber (2007) has argued, but of cannibalism. The defining feature of capitalism is its specific social and cultural organization of the appropriation of geographically remote labour and land. Modern forms of market exchange, technology, and consumption represent net transfers of embodied (human) time and (natural) space extracted from some social groups for the disposal of others. Rather than directly controlling the labour of other human bodies in the vicinity, as in slavery, this is achieved by controlling the products of labour. Rather than shipping commoditized labour (in chains) across the oceans, modern ocean-liners thus ship the commoditized embodiments of labour. Ever since the first textile factories emerged in early industrial Britain, machines have assumed an illusory dissociation from the social relations of exchange through which their raw materials are extracted, appropriated, transformed, and redistributed.

I have argued that this illusion rests on the cultural assumption that material objects are politically innocent and immune to moral critique. The same, ultimately Cartesian illusion liberates consumers to continue devouring distantly derived objects without any significant moral qualms about the social or ecological implications of consumption. As the use of

general-purpose money and objectified market exchange were understood as immediate reciprocation and the severance of further social relations between market actors, the spirit of the gift (Mauss, 1990 [1925]) was increasingly overshadowed by commodity fetishism. This cultural framework became solidly entrenched in the currently hegemonic economic discourse that was devised by (and for) successful stock brokers such as David Ricardo (cf. Gudeman, 1986), situated in the hub of a global empire.

A central paradox of this framework is that its point of departure appears to be a generalized power over objects, as exemplified by both consumption and by the fundamental severance of moral relations to an objectified environment, while it simultaneously implies an unprecedented submission to objects, as exposed in Marxian analyses of fetishism. Although a prerequisite for modernity appears to have been an abandonment of animism, this very objectification of Nature may have paved the way for increasingly opaque varieties of fetishism.

I have tried to show that the concept of fetishism continues to be useful, not only within fields concerned with theology or the phenomenologies of aesthetic experience, but also for extending a general Marxian understanding of political economy. In particular, it can help us solve a neglected but puzzling conundrum of social science, viz. how access to technological objects (i.e. 'development') can simultaneously be conceived as a result of exploitative accumulation and as the politically benevolent emancipation of all humankind. The answer, in this analysis, is that the fetishism of technology represents a specific mode of mystifying unequal exchange.

To conclude, we can ask ourselves what is the common denominator of the ideological pillars of modern power, which maintain the illusion of a morally neutral economy and technology, mystifying the affinities between capitalism and slavery, technology and magic, and consumption and cannibalism. I think the key is the phenomenon of *denial*. Johannes Fabian (1983) observed that the whole idea of development is founded on the denial of coevalness. The implicit assumption is that the people who don't own machines somehow inhabit an earlier period of time than those who do. In a similar manner, I suggest, the idea of the world market rests on a denial of appropriation. The concept of unequal exchange simply does not exist in the vocabulary of mainstream economics. Finally, our image of technology – much like commodity fetishism – is based on the denial of embodiment, i.e. of the interfusion of Society and Nature. In our Cartesian world view, objects are automatically exempt from moral critique.<sup>21</sup> And the denial of our co-existence with, exploitation, and consumption of other people is, like the Cartesian matrix as a whole, ultimately a dissociation from the reality of the Other.



## Notes

1. This lack of concern, along with a frustrating lack of clarity, has for me been a source of deep ambivalence about Latour's work, which is reflected here in my selective endorsement versus rejection of different aspects of his approach.
2. I use the word 'machines' to refer to technological objects the existence and operation of which is ultimately dependent on access to inanimate energy sources such as fossil fuels and electricity.
3. Ted Benton (1989: 76) suggests that Marx can be understood as 'a victim of a widespread spontaneous ideology of 19th-century industrialism'. In a response to Benton, Reiner Grundmann (1991: 118–19) observes that Marx's contradictory approach to machine technology – 'dead labour endowed with movement' – was 'to attribute all negative aspects of machine technology to its capitalist *use*, and to attribute all positive aspects to machine technology *as such*'. It is precisely this notion of 'technology as such' that social science can no longer consider tenable, not least after Latour. It thus remains a central problem of Marxism.
4. To put it very succinctly, technology is founded on what the economists call arbitrage.
5. Mainstream understandings of global disparities in access to modern technology tend to account for the disparities in terms of an uneven development of purchasing power, without recognizing that this uneven development (i.e. lower wages in certain sectors of the world-system) is what makes the technology possible (i.e. accessible to high-wage sectors) in the first place.
6. Needless to say, and in countless ways, technologies do not merely reflect social interests and strategies but obviously also impose their own material logic and constraints on social organization.
7. No doubt he was also constrained by the general technological optimism of his time (Benton, 1989: 76), and by the expectation of the British labour movement that his analysis of capital accumulation would yield an attractive political vision.
8. Marcus and Fischer (1986: 141) propose that 'a major task of the epistemological critique offered by anthropology is to deal directly and in novel ways with the materialist or utilitarian bias of Western thought in explanations of social life'.
9. Against this background, it seems ironic that calls are now being made for an 'environmental ethics'. The very idea poses a conundrum for Cartesian objectivism. How shall we be able to reintroduce morality into our dealings with our non-human environment, now that we have invested centuries of training and discourse into convincing ourselves that Nature lays beyond the reach of moral concerns? Probably because animism would imply such moral constraints, the few Western scientists who have seriously championed an animistic world view (e.g. Uexküll, 1982 [1940]; Bateson, 1972) have inexorably been relegated to the margins. This is not because their arguments about the semiotic and communicative dimension of ecosystems have been shown to be invalid, but because they have been found irrelevant to the modern project. The primary interest of Western science is not to get to know living organisms as subjects but as objects.

10. I have elsewhere suggested that this abandonment of essence is structurally related to the final abandonment of the Bretton Woods gold standard (Hornborg, 1999).
11. 'Technology thus serves as the verification of science in the same way that pre-Columbian Andean harvests verified the divine ancestry of the Inca emperor and the efficacy of his ritual communication with the Sun. ... Science relates to technology as Ricardo's economic theory to his own success on the stock exchange: it works, therefore it is true' (Hornborg, 1992: 15).
12. Although perhaps intended to counter such critique, Latour's (2004) obscure attempt to redefine 'political ecology' will surely not advance the struggles for social and environmental justice. I venture, quite in line with Latour's own Foucauldian recognition that 'truth' is linked to strength, that it may not be a complete coincidence that this book was commissioned by the same government that authorized the sinking of the *Rainbow Warrior*. The book has nothing to do with 'political ecology', lacking even a single reference to the central literature in the field, but apparently assumes that the term is synonymous with 'environmentalism' or 'environmental politics'. Considering Latour's (2004: 6) disclaimer regarding his frail authority on the topic, the usual profusion of diffuse prose is all the more embarrassing. Although there is no space here for a systematic discussion of his argument, it will suffice to point out that to acknowledge the continuous interfusion of Nature and Society – and the obvious fact that any *representation* of Nature or Society is a fabrication – does *not* imply that Nature or Society do not have objective properties (cf. Bloor, 1999).
13. All such objects, inasmuch as they perform political functions, deserve to be called 'technological', whether, for instance, pre-modern fetishes, temples, keys, coins, credit cards, combustion engines, or nuclear missiles. The argument here is that most technological objects are not intrinsically neutral items that are merely employed for political purposes, but phenomena that for their very existence *presuppose* political relations based on uneven control and unequal exchange.
14. It is advisable to distinguish between pre-modern and modern (capitalist) versions of fetishism, where the former consists in attributing full personhood, the latter only agency, to non-living things. In aspiring to dissolve the distinction between 'fetish' and 'factish', Latour (2010: 11) obscures this important difference.
15. It will be observed that, in distinguishing between (objectively) living and non-living things, I concede, contrary to Latour, that objectivism can be a very useful *analytical* stance.
16. Cf. Pietz's (1988: 114) remark that colonial European writers frequently observed that pre-modern Africans were inclined to perceive technological objects as magical beings.
17. However, in aspiring to criticize the fetishism of his contemporaries, Marx (commendably) drew completely different conclusions from this strategy than has Latour (2010). Even if provisional, the long-term project of critical deconstruction must not be abandoned.
18. The etymology of the word 'fetish' can be traced through a Portuguese word for magic and sorcery (*feitico*) to a Latin word for manufacture (*facticius*; Pietz, 1987).

19. I here use the word 'magic' to refer to goal-oriented action, the efficacy of which is perceived to be the result of other conditions (e.g. the intrinsic power of a fetishized object) than those that are actually prerequisite to making it efficacious (e.g. social relations of exchange).
20. Here is a short version: A hungry tramp is reluctantly admitted into a rural kitchen, but the housewife has no intention of serving him any food. He pulls a stone out of his pocket, asking merely for a pot of water to boil some soup on it. The housewife is too intrigued to deny his request. After a while, stirring and carefully tasting the water, the tramp observes that the soup might be improved with some flour, as if this was the only missing ingredient. The housewife, still baffled, consents to offer him some. Then, one by one, he similarly manages to lure her to add the various other ingredients, until finally she is amazed to find a delicious soup cooked on a stone.
21. Regrettably, as I have shown, this seems to apply no less to the post-Cartesian world view of Bruno Latour.

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