Submitting to Objects: Fetishism, Dissociation, and the Cultural Foundations of Capitalism

This article discusses how the way humans relate to material objects is a fundamental aspect of modern capitalism. The aim is 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 & Pietz 1993; Spyer 1998; Mitchell 2005; Latour 2010),[1] to a general critique of global capitalist relations. For obvious reasons, 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 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 aspects of culture theory with perspectives from political economy, world-system analysis, and ecological economics in order to "defamiliarize" (Marcus & Fischer 1986) our everyday understanding of technology. Empirically, the discussion ranges 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 (1867-1893) famously observed that relations between people in capitalist society assume the form of relations between things. 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 labor. 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 consumption goods and the violence of physical sabotage. Ultimately, it provides a radically alternative perspective on the economic, political, and environmental inequalities of global society. In order to seriously challenge those inequalities, we would have to open our eyes to the social relations underlying modern technology.

Modern technological objects (here referred to as "machines"[2]) are basically also inanimate things attributed with autonomous productivity or even agency, obscuring their own foundation in asymmetric global relations of exchange (Hornborg 1992, 2001a, 2001b, 2009).

The Marxian concept of fetishism can thus be extended from our understanding of money and commodities to explain how we tend to be deluded by modern technology. 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?

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 Marxist focus on the unequal exchange of embodied labor with more recent, ecological concerns with the unequal exchange of embodied land (Hornborg 2006). By selling £1000 worth of cotton textiles on the world market in 1850, a British factory owner was able to exchange the product of 4.092 hours of British labor for that of 32.619 hours of (mostly slave) labor in overseas cotton plantations. In terms of space, the same market transaction implied the appropriation of the annual yield of 58,6 hectares of agricultural land overseas in exchange for the space occupied by a British textile factory. This was the global context of the steam engine, and the economic rationale underlying the shift to fossil fuels.[3] It locally saved time and space, but at the expense of human time and natural space elsewhere in the world-system.

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 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 issues of global resource distribution. 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. 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.

In order to understand fetishism as a simultaneously cultural and political phenomenon ultimately implicating macro-scale power structures at the global level, we need to consider a spectrum of ways in which humans can relate to other beings and other things in their surroundings. Let us begin by discussing the contrast between animism and objectivism.

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 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 pre-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 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 can approach the notion of animism from the perspective of what Latour (1993) has called a "symmetric anthropology": an anthropology that does not merely represent an urban, modern perspective on the pre-moderns in the margins, but that is equally capable of subjecting modern life itself to cultural analysis. Latour argues that we have, in fact, never been modern. The notion that the world of objects and the world of subjects are separable, in any other than an analytical sense, has been an illusion from the start. Not only do human beings everywhere impute personhood and agency to entities which according to official modernist doctrine ought to be classified as objects (think of our favourite trees, houses, cars, or teddy bears), but Latour makes the important point that modernity itself, through the new socio-technical networks unleashed by its dualist epistemology, continually generates ever more obvious examples of hybrids or "quasi-objects" that contain both subjective and objective aspects, and that span the divide between Culture and Nature. In other words, the official Cartesian ideology of subject-object dualism is not only contradicted in our

everyday lives; when applied in social and technological practice, it inexorably produces increasingly conspicuous evidence of its own invalidity. From the ozone hole to genetically modified organisms, the real world afflicted by modernity has shown itself to be not only permeable to, but imbued with, politics, meanings, and human intentions. The new technologies and networks prove to be not objects but what Latour calls quasi-objects: part Nature, part Society, and apparently brimming with agency.[4]

Our training in the skills of modernist detachment and objectification is contextual, as illustrated by the professional logger who privately cares for his garden, or the industrial butcher who privately cares for his dog. The efficacy of modernity in unleashing wholesale transformations in human-environmental relations lies in the creation of a spectrum of highly specialized occupations, each emphasizing its own specific application of objectification and detachment, so that the total impact of modern society is unrestricted by moral concerns, while each individual is able to maintain, by and large, a moral identity. In other words, it may not so much be an incapacity to relate as such that distinguishes us from the animists, as the incapacity to exercise such relatedness within the discursive and technical constraints of the professional subcultures that organize the most significant share of our social agency. Science and technology does not so much make us into robots, as make specific parts of our behaviour robot-like.

Or does the difference indeed go deeper than this? Do modern people have a generalized tendency to perceive their environments as collections of objects? A compelling observation in this direction is Viveiros de Castro's (1999) intriguing suggestion that Europeans and Amerindians have diametrically opposite images of how humans and animals are constituted. Whereas Europeans tend to conceive of human beings as biological organisms masquerading in a cultural costume, Viveiros de Castro observes that Amazonian Indians view animals as fundamentally persons concealed under their animal surface. For Europeans, then – or at least for European biologists – living things are fundamentally objects, while for Amazonian Indians they are fundamentally subjects. The latter, of

course, is an unusually concise statement of animism. But then, the Cartesian view of non-human animals seems counterintuitive, even to the most ingrained modernist. A telling illustration of this is the classical example of the early European vivisectionists, who felt compelled to sever the vocal cords of the dogs whose living anatomy they explored (cf. Evernden 1985:16-17). In effect, they could only perform their modernist task after having shut off the communicative link – the relation – between dog and human. This is a very tangible illustration of how objectification can be seen as a strategy of dissociation.

Modern Struggles for Relatedness: The Semiotics of Knowing

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. Significantly, 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. Against this background, it seems ironic that calls are now being made for an "environmental ethics". The very idea indeed 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?[5]

If the systematic modern denial of relatedness is somehow at the root of ecological crisis, as many environmentalists believe, what are our prospects for resurrecting it? It is difficult to imagine that modern society as an act of instrumental reason should begin inculcating in its citizens the long-term ecological validity of pre-modern metaphors of what Bird-David (1993) calls "subject-subject relatedness". However much we admire the eco-cosmologies of the Nayaka, the Achuar, or the Cree, we should not expect to encounter them anywhere but in the anthropology departments, and definitely not in mainstream textbooks on ecology or sustainability.

Nor can we put much hope in what has become known as New Age spirituality. The movement as such is highly relevant from the point of view of this discussion, but it is a flimsy platform on which to build a future: a post-modern symptom of epistemological collapse rather than an advance on modernity. When neo-pagans and other New Age enthusiasts proclaim that this or that sacred site possesses such strong "energy", it seems as if they are indeed struggling for relatedness – for a restoration of meaning beyond the existential wasteland of modernity (cf. Heelas 2008) – but remain confined to the modernist (and, in fact, scientistic) vocabulary through which objective properties are attributed to distinct, external things (cf. Hanegraaff 1998; Hammer 2000). New Age spirituality thus reproduces the inclination of mainstream science to turn subjects into objects, only now the objectified subject(ivity) is one's own.

Surrounded by philosophers and sociologists of science announcing the end of Cartesian objectivism and acknowledging the extent to which human meanings infuse the material world, anthropologists discussing animistic understandings of nature will now be excused for taking them more seriously than a generation ago. But rather than going native, or adopting some version of New Age spirituality, it is incumbent on us to analytically sort out what epistemological options there are, and to ask why pre-modern, modern, and post-modern people will tend to deal with subject-object relations in such different ways.

The object – in the sense of a material, intrinsically meaningless, but essentially knowable reality – appears to be a thoroughly modern invention. Whichever interpretative schemes 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 (e.g., the claims of the neo-pagans). 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 (Hornborg 1999a). This post-modern abandonment of essence is what Baudrillard (1975) has aptly called the "autonomization of the signifier".

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 technology – 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. One reason why animism continues to intrigue us may be that this is precisely what animism does. Rather than viewing knowledge as either representation or construction, animism suggests the intermediate view that knowledge is a relation that shapes both the knower and the known. An animistic or relational ontology is a mode of knowing that is not only constitutive of both the knower and the known – as is all knowledge, according to the cognitive scientists (cf. Maturana & Varela 1992) – but that crucially also acknowledges this fundamental condition, and thus also the responsibilities that must always adhere to the very act of knowing. Beyond objectivism and relativism, there can only be relationism. Perhaps because purely instrumental knowledge and rational risk assessment can rarely be as powerful incentives for human action as moral imperatives, we may need new metaphors capable of sustainably relating us to the rest of the biosphere (Hornborg 1996).

Animism raises our curiosity as the hesitant acknowledgement of suppressed childhood experiences, the assertion of which would challenge the entire modern project. Relatedness is a condition that most of us continue to be capable of achieving in particular, experiential contexts of some minimal duration. Our modernity – our inclination toward abstraction, detachment, and objectification – is the product of our disembedding biographies (Hornborg 1999b). It is in being involuntarily deprived of relatedness that we become Cartesianists. The powerful historical trajectory of objectivism relies on a peculiar recursivity between social disembeddedness, Cartesian epistemology, and technology – ultimately, that is, between individual existence and socio-technical power structures. The epistemological predicament articulated by Descartes was not so much an innovative, cognitive shift from animism to objectivism, as the emergence – or unprecedented generalization – of a social condition of alienation. Through processes of increasing commodification and alienation – and more recently through the proliferation of new technological hybrids in Latour's sense – the social condition of modernity has accentuated our anxieties about where or how to draw boundaries between persons and things (cf. Kopytoff 1986), amplifying a pervasive (Cartesian) dissociation of self

from non-self that, as we have seen, is at the root of both solipsism and objectivism. To the extent that we do continue to animate our favourite trees, houses, cars, or teddy bears, it is because we continue to need concrete reference-points onto which to anchor our selves (cf. Shweder & Bourne 1984; Hornborg 2001a:206-208). It is the long immersion in the concrete and experiential specifics of place that yields conditions conducive to relatedness – vis-à-vis irreplaceable persons, localities, and things. This, if anything, should provide us with clues about the prospects for resurrecting relational ontologies.

Fetishism and the Cultural Analysis of Capitalism

There is another and thoroughly modernist way in which things can be animated, which has to do not with experiential resonance but with ideology and political economy. Animation is in fact fundamental to fetishism, and fetishism to Karl Marx was central to modern capitalism (cf. Friedman 1974; Taussig 1980; Pietz 1985-1988, 1993, 1998; Miller 1987, 2005; Ellen 1988; Hornborg 1992, 2001b). It is indeed 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 (Marxian fetishism), and experiencing relations to things as if they were relations to people (animism). 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). 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. 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 that 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 (cf. Ingold 2000)? 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.

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. Latour 1996; Ingold 2000; Ihde & Selinger 2003).[6] For instance, both Ingold and Latour 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.

There is something about the general concept of "technology" that seems to escape us, both as social scientists and as citizens. On one hand, modern technology seems quite obviously to be a

strategy 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, 2006, 2009). On the other hand, technology tends to be represented as a politically innocent and intrinsically productive union of human inventiveness and the pure material essence of Nature – indeed as a gift of the wealthier, developed nations to the rest of humanity (Adas 1989, 2006; Marsden & Smith 2005; Friedel 2007; Headrick 2010). How are these two contradictory images of technology able to coexist, without the former contaminating the latter? The answer, Latour would probably say, lies in that 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. For how could pure objects be conceived as sources of malign agency? If the behaviour of the early nineteenth-century Luddites today strikes us as odd, it is because they were not yet quite modern. Today we supposedly know better than to direct our political frustrations at machines. The efficacy of technology, we hold, comes from "objective properties intrinsic to the nature of things" (cf. Latour 1993:51). Like economic rationality and scientific truth, says Latour, technological efficiency "forever escapes the tyranny of social interest" (ibid., 131).

But if these modernist convictions were indeed to collapse, and we were to realize the extent to which our technologies are in fact politically constituted, our machines would cease to be pure objects and conceivably be accredited with a malicious agency far surpassing that of any pre-modern fetishes.[7] Such a transformation would hinge on the nature of the agency attributed to technological objects: from having been fetishized into politically neutral, autonomous agents, they would emerge as social manipulations. 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. And in seeing, for the first time, the machines as they really are – as machinations – perhaps the animist within us

would stir again, and we would ask ourselves: What manner of creatures *are* these things, part mineral, part mind, that serve the few to enslave the many, while fouling the land, the water, and the air?

Such a scenario serves to remind us that animism and relatedness bring possibilities not only of harmony and community, but also of horror and rage. It might help us understand how the Cartesian suppression of relatedness has served a fundamental ideological purpose in the emergence and expansion of industrial capitalism. Against this background, nothing would appear to be more revolutionary than to rekindle some of our pre-modern attitudes as we confront the demons of our own making.

Fighting against Machines

History tells us, however, that revolutionary rage is rarely enough. Machines became the objects of political violence exactly two hundred years ago, in early industrial England, through 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 factory system was explicitly likened to "colonial slavery" (Sale 1995:23), and 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. As Charlotte Brontë later wrote, it is not difficult to understand why "these sufferers hated the machines which they believed took their bread from

them; they hated the buildings which contained those machines; they hated the manufacturers who owned those buildings," yet "it would not do to stop the progress of invention" (quoted in Sale 1995:15-16). The British authorities swiftly crushed the Luddite movement and executed its leaders. Sale (1995:5) concludes that "the architects and beneficiaries of the new industrialism knew that it was imperative to subdue that challenge, to try to deny and expunge its premises of ancient rights and traditional mores, if the labor force were to be made sufficiently malleable, and the new terms of employment sufficiently fixed, to allow what we now call the Industrial Revolution to triumph unimpeded."

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 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 tenth-century Maya, or Easter Island?[8] 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 pre-modern form of fetishism, if we define fetishism as the attribution of animacy and agency to non-living things. On the other hand, their actions can be said to have been intuitively justified, if we concede that the machines were indeed objectified social relations. In fact, to ontologically divorce the machines from social relations of exchange, as has become the predominant outlook in modern industrial society, suggests a more subtle and mystifying form of fetishism (Hornborg 2001a). If the (unevenly distributed) accumulation of technological infrastructure is viewed simply as what Brontë called "the progress of invention", i.e. as an inevitable accretion of ever greater technological capacity, irrespective of a population's position in a global system of resource flows, we may be mistaking a privileged position in global social space

for an advanced stage in historical time (Hornborg 2009). Nevertheless, the persuasiveness of machine fetishism has proven highly durable for two hundred years. The 2001 attacks on the World Trade Center in New York notwithstanding, physical sabotage against modern infrastructure has not been a viable strategy for subverting modern power.

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) 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 turned the notion of fetishism back on Europeans attributing it to exotic Others. 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; Latour 2010). The human exchange and appropriation of things has always been about the production of persons, but, as Graeber reminds us, commodity fetishism encourages us to imagine otherwise. For instance, although the idea of private property is a thoroughly social relation, i.e. a person's right to exclude others from access to a thing, it presents itself to us as a relation between that person and that thing. Nor do we generally see that the commodity is an embodiment of other people's labor and landscapes. If the consumer's sovereignty over his or her commoditized objects is modeled on the monarch's sovereignty over his or her subjects, as Graeber (2007:73) suggests, the affinity between the two relations thus boils down to a transformation of social power.

Viewed in this light, it is revealing to see how closely related capitalism is to slavery (Graeber 2007: 85-112). Not only was wage labor generally abhorred by free men in pre-capitalist societies, the underlying principles of capitalism and slavery are disturbingly similar: both systems involve exchanging abstract human labor power for money; both involve rationalized industrial organization of production; both rely on a spatial separation of the reproduction of labor and its realization in production; and both (in principle) deny any relevance of a worker's social identity outside the

workplace. (Yet, Graeber notes, capitalism presents itself to us as freedom, viz. the freedom of every individual to *sell* his or her freedom.)

What do all these features shared by capitalism and slavery have in common? The commoditization of abstract human labor 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 labor, these systems make it possible for the extracted agency or life-force (Graeber calls it "creative action") of human workers to be appropriated by others in the form of objects representing congealed abstract labor. 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 labor power is a means of transforming human energy into profits, or capital.

But the analysis can be pushed even further, for paradoxically, Marx was not a Luddite.[9] 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 thus 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 labor 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.

It is not a coincidence that Harvey (1996) and Graeber (2001) have both been intrigued by Munn's (1986) study of how the exchange of pre-modern money objects in Melanesia generates specific kinds of "spacetime" in the sense of particular relations of claims and reciprocities that variously

extend the social reach of individual persons. The transition to general-purpose money, which now dominates our lives, has entailed a generalization of exchange in time and space. Money can thus be seen as an institution for delaying and extending the universal, gravitational pull of reciprocity. It is the transformations of this pull that make possible increasingly asymmetric exchanges between distant populations and ecosystems. And it is these increasingly asymmetric exchanges that make possible our technology. Time-space compression relies on time-space appropriation (Hornborg 2006).

Machines, Magic, and Power

In struggling to grasp and communicate the magnitude of our misunderstanding of the phenomenon of technology, I have found no better framework than the Marxian concept of fetishism (Hornborg 1992, 2001b). As also Graeber (2001:239-246) has recognized, this concept immediately prompts us to consider the issue of magic.[10] 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. 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:

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*.

In transferring attention from the wider context to its imaginary center, 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. Graeber (2001) shows that the former never operates only by power of suggestion, or, conversely, by power intrinsic to the people who have it, but through the social relation by means of which these people are able to convince others that they do have it. Pre-modern power is thus cognate to magic because both rest on the premise that stage illusions work and must thus on some level be true. 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 1962, 1975; Paulsen 1974, 1977; Marcos 1977/1978; Morris 1978; Godelier 1986). The illusion no doubt *worked* in the sense that the metabolism of the Inca empire 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 1985, 1987). This trade, of course, hinged on the cultural evaluations 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 such 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 labor. The productive potential on which the system was based was still local labor, and the rate at which prestige goods were converted into work was to some extent negotiable. But in modern industrial centers, 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, and the magic agency of fetishized objects has become compelling in completely new ways.

Modern power relations based on economic and technological accumulation is thus, like pre-modern power, dependent on the ability of social elites to extract obedience and labor 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 spectacle 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 labor 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

Let us conclude by pursuing some additional implications of this cultural analysis of capitalism. Graeber (2007:57-84) asks why our concept of "consumption" builds on the metaphor of eating. He provides several persuasive historical hypotheses for why this metaphor is now applied to whatever people do when they are not working, including the urge to destroy things in order to gain recognition of one's sovereignty over them. Eating is indeed the perfect idiom for destroying something while literally incorporating it. But Graeber argues that many activities conventionally classified as consumption, such as watching television, do not involve goods that are destroyed by use. Nor, for the same reason, does he think that a teenage band practicing in a garage should be thought of as engaged in consumption. Yet, even these activities must submit to the joint constraints of capitalism and the Entropy Law (Georgescu-Roegen 1971) that correctly identify consumption as destruction: any activity that, for want of other resources, must involve manufactured goods – or even using electricity – implies destroying purchased physical resources in the process of creating meaning. The concept of consumption thus deserves to be retained, for its critical potential: because it 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.

Graeber (2007) criticizes the concept of consumption from two opposite angles, viz. for being perceived respectively as creativity and destruction. As much as I share his skepticism regarding the ideological uses of the former perception, I am unable to abandon the latter (even when applied to TV programming). In fact, 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. Graeber (2007:57-84) traces the historical recognition that 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, rather than the extent of resource destruction itself. 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. To continue to expose this fundamental logic seems a more trenchant criticism of neoliberalism than to debate whether this or that activity is really destructive of resources.

Moreover, if the commodities we consume (i.e. metaphorically eat) are really em*bodi*ments of other people's life energy, not only is capitalism a transformation of slavery, as Graeber has argued, but of cannibalism.[11] The defining feature of capitalism is its specific social and cultural organization of the appropriation of geographically remote labor 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

labor of other human bodies in the vicinity, as in slavery, this is achieved by controlling the products of labor. Rather than shipping commodified labor (in chains) across the oceans, modern ocean-liners thus ship the commodified embodiments of labor. 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. As I have argued in this paper, 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 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 consumption and a 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 has paved the way for increasingly opaque varieties of fetishism. Paradoxically, to expose the political constitution of the machine would be tantamount to perceiving it as a malicious agent, i.e. to animating it, and perhaps to risk revitalizing the Luddite urge to subject it to physical sabotage.

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 ("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 economists' vocabulary. Finally, our image of technology – much like commodity fetishism – is based on the denial of embodiment. In our Cartesian world view, objects are automatically exempt from moral critique. 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.

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[1] For a more systematic discussion of the various uses of the concept of fetishism, see Hornborg 2001b.

[2] I use the word “machines” to refer to technological objects the existence and operation of which is ultimately dependent on a globalized economy and on access to inanimate energy sources such as fossil fuels and electricity.

[3] The long-term implications of the global energy shifts we shall be witnessing over the next few decades may very well lead to the conclusion that much of what we have come to know as modern or industrial technology is feasible only when it requires less local land area than the same work conducted by humans and draft animals (cf. Hornborg 2011). This has indeed been the case through two centuries of fossil fuel energy, but at the moment we have no reason to believe that this specific kind of rationality will extend beyond the fossil fuel era.

[4] The invalidity of the Cartesian dichotomy challenged by 'actor network theory' (ANT), by imputing agency to material objects, has been recognized as applying generally to human interaction with the remainder of the biosphere (Latour 2004; Bennett 2010). There is definitely a sense in which material objects of various kinds – even landscapes – can be agents, prompting or constraining human action. However, agency does not necessarily mean subjectivity or intentionality, while the agency of technological artefacts that we here refer to as 'machines' (see note 2) generally deserves to be scrutinized in terms of the embodiment or delegation of political intentions.

[5] Probably because animism would imply such moral constraints, the few Western scientists who have seriously championed an animistic world view (e.g., Uexküll 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.

[6] This disjunction of technology and economy is equally characteristic of mainstream studies in the philosophy of technology (for an overview, see Ihde 1993).

[7] Cf. Pietz' (1987:114) remark that colonial European writers frequently observed that pre-modern Africans were inclined to perceive technological objects as magical beings.

[8] Compare Latour's (2010) discussion of iconoclasm.

[9] In fact, it is not unusual to regard Marx as, in some respects, a victim of the technological ideology of nineteenth-century industrialism (e.g. Benton 1989:76).

[10] 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).

[11] For the biologically inclined, I might suggest that modern technology and consumption represent a form of parasitism between members of the same species. A similar argument has in fact been suggested by Ruyle (1973:223-225), but we should recall that cannibalism here serves as a metaphor rather than a literal understanding of consumption. Ruyle does not distinguish between the consumption of food and the consumption of other "material use-values", only the former of which is actually consumed in the sense of being incorporated in the physical body of the consumer, but only the latter of which are produced in the sense of incorporating energy expended by the producer.