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Short Essay
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Abstract   The commodity created under global capitalism originates from every-where and seems to have been made by everyone. Endlessly fungible, it is also endlessly divisible. Analysis of the commodity reveals the indissoluble link between com-modification and technologization. Although the medieval commodity is a very different kind of object, not issuing from an economy dedicated to commodity production, and being produced more regionally, the link between production and technology applies to the Middle Ages as much as it does to now. Medieval technology, in particular road-building, is commonly regarded as a regression in comparison to Roman engineering skills. I argue, however, for the directedness of medieval technology, even when in apparent regress. This 'regression' calls into question the narratives of progress that inform debates about the posthuman, with all its attendant anxieties and heady possibilities. The case of medieval roads exposes the contingency of 'efficiency' as any standard of measure.

'I, Pencil', published in 1958, is a prosopographical *jeu d'esprit* in which a pencil (an Eberhard Faber Mongol 482, to be exact) narrates its genealogy, which proves to be huge. This unremarkable pencil seems simple to produce yet '*not a single person on the face of this earth knows how to make me*' (Read, 1958, 32), and even though no one person knows how to make a pencil, millions of people scattered across the planet took part in its production.

Were we to draw Pencil's family tree, it would resemble no ordinary genealogy. Pencil has many first-degree relatives (that is, components) – cedar

tree, black nickel, ferrule, lacquer, glue, lead, factice and tint – out of which one cannot really prefer any two as parents. Second-degree relatives would be the components of the components; for example, Pencil's 'lead' is itself composed of wax, fats, graphite, clay, tallow and so on. This family 'tree' is more like a massive web of relation that sprawls into a rhizome, where the pencil, which initially seemed center stage, becomes just one of many local centers. Were we to map Pencil's origins we would straddle continents – graphite from Ceylon, cedar from Oregon, clay from Mississippi, candelilla wax from Mexico, rapeseed oil from the Dutch East Indies, pumice from Italy. Reach beyond the immediate components of Pencil to consider the ancestry of the saws, trucks and rope used for logging the cedar, of the coffee the loggers drink, of the hydro plant driving the power of the sawmill, and Pencil's web of ancestry spins around the globe, impenetrably dense. Given the noise rumbling from Ceylon to Oregon that surrounds Pencil, the buzz of other busy hubs of connection or nodes where related objects reside, it takes an effort of imagination to hold Pencil at the center of consciousness, to get back to the thing itself or walk around it. This commodity, a pencil, created under global capitalism, originates from no one place, has no local provenance and is made by no one. Spectral indeed.

Reading Pencil's family tree, we would be right to recollect Adam Smith's description in the *Wealth of Nations* of a woolen coat, with its similarly far-flung ancestry; and by the time Pencil speaks of an 'Invisible Hand' that guides individual self-serving into a happy convergence of mutual interest, Smith's own hand in Read's essay has become not so invisible (Read, 1958, 37). To our pencil, then, add a pin, a 'trifling manufacture' (Smith, 1976, 1:14). An unskilled worker, Smith calculates, could without the aid of machinery make one pin a day, perhaps a few, though not even as many as 20. But divide pin-making into discrete tasks – in this case about 18, performed by about 18 different workers operating as a team – and the output exceeds by thousands the sum total output of 18 pin-makers working individually, one pin at a time. Maximum productivity is achieved when the worker performs only one action so that no time is wasted in 'sauntering' between tasks (Smith, 1976, 1:19). Such is the miracle of the division of labor. No longer a pin-maker, the worker becomes a-putter-of-pins-into-paper, or a wire-straightener, or a pinhead-maker. Subdivision of one multi-staged, complex task into many discrete, simple tasks increases supply.

But what makes Smith's division of labor in the pin factory different from, say, the division of labor in Plato's *Republic*? There, in the ideal city, the community emerges through mutual provision of need, where citizens produce goods sufficient not only for their own consumption but also for the consumption of others in order that they in turn may be provided with necessities they themselves have not produced (Plato, 1930–1935, 1:148–157). One makes shoes for all, another builds houses, another weaves cloth. Such is the minimal societal unit. Where Plato's cobbler relates to shoes as craftsman

does to artifact, Smith's worker relates not to a whole pin but only to a part of a pin – a piece of wire, a wrapping paper, a pinhead. What Pencil claims of itself the pin, now collectively manufactured, can also assert: not a single person on the face of this earth knows how to make me. In Smith's paradigm, the object qua whole is dispersed into a welter of subdivided parts. The commodity, endlessly fungible, is endlessly divisible.

Extreme division of labor can only successfully occur in industrial manufacture. Less a specialization – a term that implies some difficulty and discernment demanded of the worker – Smith's division of labor involves the perpetual repetition of the same muscular reflex. Indeed, the worker's body behaves as a machine and is in theory interchangeable with and replaceable by a machine – a point Charlie Chaplin's *Modern Times* aptly visualizes. For Smith, mechanization is an essential supplement to and replacement of the human body. His ideal pin can only exist when mechanization plays a part in its production, suggesting that commodification and technologization are indissolubly linked (Smith, 1976, 1:17).

'Technologization' allows us to think of equipment in the broadest way, from a stone serendipitously ready-to-hand when breaking a nut, to the clunky, power-driven machines in a nineteenth-century factory, to the 'sunshine' of our most advanced systems, which 'are all light and clean because they are nothing but signals, electromagnetic waves, a section of a spectrum, and these machines are eminently portable, mobile … People are nowhere near so fluid, being both material and opaque. Cyborgs are ether, quintessence' (Haraway, 1991, 153). Although it is true that our latest technologies are increasingly a matter of information rather than objects, that they increasingly dematerialize machines, this spectral quality is not exclusive to the elegantly ethereal inventions of today. Add to our menagerie of objects the wooden table of which Marx speaks in *Capital* (Marx, 1992, 163–164), and we see that insofar as objects are commodities or constructed out of commodities (and is there anything on our horizon that really eludes that category?), they shimmer mystically above their sensuous wooden or metallic being. In Marx's analysis, the tactile world becomes increasingly distanced from conscious life as commodities invest themselves with more social personality and more meaningful exchange than that possessed by the workers who made them. Significant existence transfers from humans into the objects they work for. The machine and the commodity, made by no one and everyone, originating from nowhere and everywhere, contain within them something of the ghostly.

At this intersection of technology and a historically specific mode of economic production, the question arises as to the relationship between the medieval human subject and object. Was the late-medieval object less spectral, less alienated from the human subject than its counterpart of today? Could Pencil have spoken then as it did in 1958? At one level, the answer has to be 'yes' to the first question and 'no' to the second. Although there was an ample

supply of luxury foreign goods and gadgets adorning the homes of England's wealthier classes – Bohemian glassware, drinking vessels from France, linen from Germany, silk from southern Europe and the East – such exotica will scarcely have figured in the dwellings of peasants or impoverished townsfolk, whose 'commercial range was shorter than that of the aristocrats' (Dyer, 1994a, 273). As a general truism, daily household objects would have been produced and procured locally, and what could not be produced locally would be procured locally at market. Tin, for example, would have traveled from Cornwall or Devon, and Purbeck marble from Dorset, while iron and of course timber were more evenly distributed throughout the country (Blair and Ramsay, 1991, 58, 41, 167, 379). Peasant and aristocrat alike bought regularly in the countryside, and commercial migration for the peasantry extended little more than 10, maybe 16 miles (Dyer, 1994a, 273–274). Take a drinking bowl, such as the stag bowl we see in York's Barley Hall (Figure 1).[1]

Although this vessel is a novelty rather than an ordinary item (as the drink is lowered the stags' antlers emerge), it is of simple construction and local production. Clay dug from the bends in the Ouse to the northwest of the city might have provided material for the pottery, and the dyeing and glazing could also have been locally executed, the lead required for glazing quite likely coming

1 This bowl is not medieval but is modeled from medieval archaeological finds in York. With thanks to Barley Hall, York Archaeological Trust for permission to publish the photograph of the bowl here and also to Lisa H. Cooper for her input in this part of the argument.
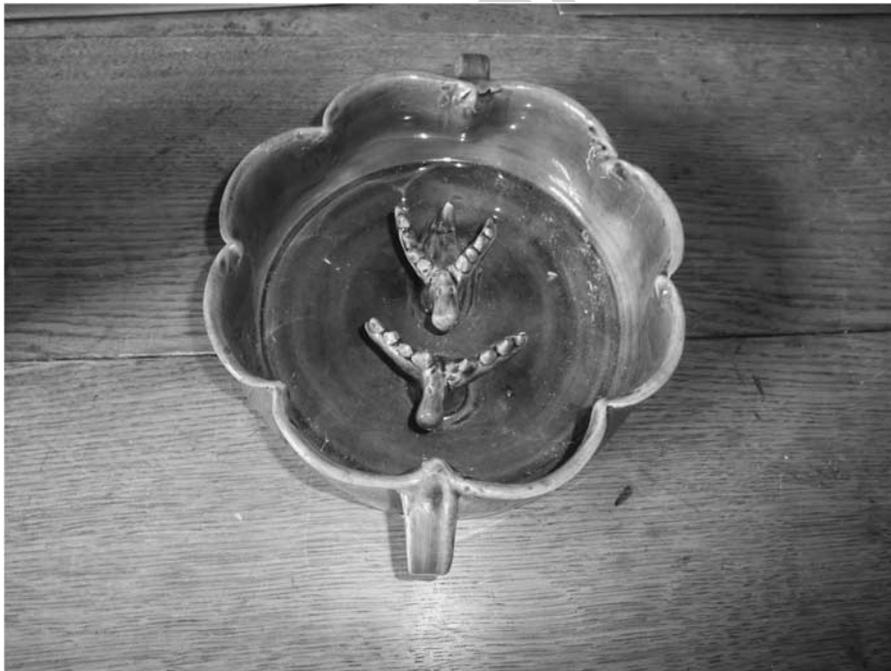

Figure 1: Stag bowl, Barley Hall, York, modeled from local medieval archaeological finds (photography by author).

from Yorkshire, one of the main centers of lead mining (Blair and Ramsay, 1991, 62). The ancestry of daily medieval objects was small by comparison with that of Pencil.

Precisely because Pencil's ancestry touches on almost every part of the globe and almost every other commodity in existence, precisely because '*not a single person on the face of this earth knows how to make me*', it enjoys a certain anonymity. One can own this orphaned Pencil outright and absolutely, never thinking of the people who made it or the things of which it was made. It is in the nature of the capitalist commodity to appear self-standing, connected to nothing, ready for purchase and consumption. But a bowl made locally, where you know the person who dug the clay, where you have fallen out with the local glazer, where the local dyer owes you two shillings – all such personal considerations thicken one's connection to the tangible, sensuous object.

Yet at another level, the differences between the objects are not absolute. The web of medieval trade relation may be more nearly woven, but it is no less tangled for all that. Whether the global commodity is abstracted from its environment, whether the medieval commodity is embedded into its environment, the object in either case is no less hard to walk around. The noise rumbling from Ceylon to Oregon is different from but no more noisy than the noise of local interference. The high degree of production in later medieval England for use rather than for exchange suggests that the term 'commodity', in the sense in which Marx speaks of it, should be used cautiously with regard to the medieval era, for we are still light years from commodity fetishism as Marx describes it, yet businessmen there were who mass-produced for the market, leading to the claim that 'capitalists and potential capitalists lived in fifteenth-century England' (Dyer, 1994b, 327). My interest is less in establishing the presence of a medieval proto-capitalism than in observing the elisions, possible in any era albeit in historically distinct form, between 'commodity' and 'tool', product and technology, ends and means. The connection between commodification and technologization noted in Smith's argument for the division of labor holds generally for product and the means of production at any time. If it is true that what we produce is determined by the tools with which we produce, then it is equally the case that our tools are themselves our production. Tools do not just happen, but come into being or are 'invented' through curiosity, need and intention, not to mention funding. This claim is less a preferring of technological constructivism at the expense of technological determinism than it is an acknowledgment of the directedness and intentionality of technology in its various historical manifestations.

To consider better this intentionality, let us turn to the wheel, or rather, to the lack of it. The wheel was a mode of transport technology that effectively disappeared from the Middle East and North Africa, at some point between the third and seventh centuries in favor of an apparently more regressive vehicular

technology – the camel (Bulliet, 1975, 22). Present under Roman dominion, which left its mark in a system of straight, paved roads, the vehicular wheel fell into disuse even though other rotating devices such as the potter's wheel persisted (Bulliet, 1975, 217). The reason for this, Bulliet argues, is that at the time and in those arid zones, the camel was simply more economically competitive than the wheel (Bulliet, 1975, 21, 26, 109). His argument debunks any technological-constructivist appeal to Islamic *mentalité* or ideology as the founding intention of camel-technology (Bulliet, 1975, 228–229). In its appeal to what seems like a neutral and decisive fact – namely, that camels were cheaper, ergo camels replaced wheels – his argument does not seem to support any claim for the directedness of technology. These terms – economic efficiency, cost-effectiveness – however, are loaded. What criteria govern efficiency? What costs, especially unquantified ones such as societal bonds, are counted into the effectiveness equation? Efficiency is not an absolute standard but is determined by the priorities and values demonstrated in the communal *mentalité*. The appeal to economics as historical cause of apparent technological regress begs the question.

Where there are wheels there are roads, and in medieval England, the wheel did not disappear. The Romans had built a grid of straight, paved roads throughout the country and they were inherited by and used throughout the Middle Ages. To the lover of the precision skills of Roman civil engineering, however, medieval road-building technology had drastically deteriorated:

> From the time of the departure of the Romans to the middle of the eighteenth century no attempt was made, save in very exceptional circumstances, to construct through-roads, or even to maintain those which already existed. The Roman art of road-making seems to have been forgotten. Road-making or road-repairing degenerated into the mere casting down of rough stones on to a more or less unprepared surface. (Grundy, 1917, 85)

So it comes about that medieval roads outside the towns are thought largely to look after themselves, a part of the natural landscape, not often built, but rather coming into being as tracks that are ready-to-hand, not so much chosen as worn out of 'habitual lines of travel' (Hindle, 1989, 6). Moreover, as Hindle's photographs show, medieval country roads often fan out into multiple parallel tracks, the traveler often moving alongside the road in the face of obstruction ahead. In contrast to these multiple tracks, Roman state and military roads such as the Fosse Way cleave the earth in two, a single straight path of dominion over the landscape. It is not that medieval road technology regressed, but that it adapted to different rhythms, communal relations at a distance and sense of need. This is, after all, a culture that built Gothic cathedrals, so engineering skills and inventiveness were not lacking. Different historical eras and different

modes of production produce their distinctive space, which is not simply an empty container filled up by a culture. Rather the space or shape of medieval England's road system *is* the technological form that the period assumes.

These multiple and parallel medieval roads disclose a reactive strategy that follows the least line of resistance, that moves according to a feel for the game, as Bourdieu would phrase it. It is a strategy that fits around the contours of the landscape, going around problems and resistances rather than through them. Poor road-planning this might seem, if Roman roads set an absolute standard, yet the meandering, ad hoc strategy proves the more 'economical' choice, for avoidance usually takes less time and energy than confrontation. The inscription of a straight road into the landscape makes the Roman road stand out on its own, imposing itself upon its surroundings rather than blending in with the ready-to-hand contours. Where the Roman administrative and military machine subordinated the landscape to their roads, medieval travelers let the road emerge out of the landscape. To this extent, we might talk about an intelligence dispersed across a landscape that includes pack animals and generations of humans, each traveler following rather than forging anew, taking what is ready-to-hand, fitting into a habitual mode before any conscious choice, making choices for the next traveler.

The 'regressive' case of medieval roads calls into question the narratives of progress that inform debates about the posthuman, with all of its attendant anxieties and heady possibilities. The lesson of medieval transport technology is this: that humanness is always a risky concept, forever changing its meaning in relation to the environment humans produce and inhabit. Further, there is nothing new about intelligence existing in collective, non-human and inanimate bodies, in generations of travelers, pack animals and landscapes, and the story of technology as a narrative of progress is a recent story; as a verb meaning 'to improve', the word 'progress' first appears only in the seventeenth century.[2] Words such as 'efficient', 'effective' and 'better' should thus be regarded with the deepest suspicion and never used without asking 'for whom?' 'Whom' implies that only humans figure in the calculation, so either we must add a second division of actors, animate and inanimate, represented by a 'for what?' or expand the category of 'persons' 'whose' need now determines the standard of technological efficiency. We do not even know how to inquire after the beneficiary of efficiency, so self-standing has the term become. Our very pronouns are insufficient to the task of representing humanity-in-relation, an issue that surely lies at the heart of being posthuman.

2 As noun, 'progress' appears earlier, in the fifteenth century; although alongside the now-dominant sense of improvement the word possessed the more neutral sense of 'movement through'.

About the Author

Valerie Allen studied at Trinity College Dublin, and taught in Dublin, Scotland, and Florida before joining John Jay College. Her publications, on medieval

literature and continental philosophy, include: a co-edited anthology on Geoffrey Chaucer (Palgrave, 1997); *On Farting: Language and Laughter in the Middle Ages* (Palgrave, 2007); *L'Art d'enseigner de Martin Heidegger* (Klinksieck, 2007); and 'Medieval English: 500–1500' in *English Literature in Context* (Cambridge University Press, 2008). She is currently co-editing an anthology of essays on roads for Manchester University Press.

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