

ephemera

theory & politics in organization

© ephemera 2010
ISSN 1473-2866
www.ephemeraweb.org
volume 10(2): 90-213

volume 10, number 2 (May 2010)

editorial

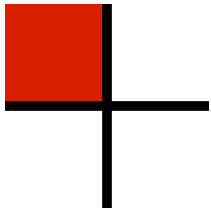
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The state of things

Steven D. Brown, Simon Lilley, Ming Lim and Stevphen Shukaitis

We delight in special requests and challenging commissions; our in-house designers and craftsmen are experts at realising a client's specific needs and desires. Whether the idea is ambitious or whimsical, Asprey's bespoke services have no limits. (Asprey's of London)¹

The social psychologist Mick Billig was once commissioned by the British Psychological Society to write one of several short pieces by eminent figures in the field responding to the public outcry that marked the days after the death of Princess Diana in 1997. Whilst the other responses dealt with such weighty matters as stereotyping, emotional literacy and conspiracy theory, Billig pointed to one small, almost insignificant detail. Found amongst the wreckage of the crash in Paris was a personalised gold cigar cutter from Asprey's of London. Billig ponders the significance of this object. What does it tell us about the life of the 'People's Princess' that she would have considered this to be a meaningful gift? What does it tell us about the life of an individual for whom trimming the ends of uncut cigars is such a chore that it requires him to carry a special implement for the task, and one made of gold, no less? Billig then uses an orthodox, but nevertheless apposite reading of Marx's 'commodity fetishism' to peel away the layers of meaning built up on the ill-fated cigar cutter. He points to the process whereby this object came to circulate as a symbol in a social circle so very far removed from the labour and lives of the people who extracted the gold from which it was made.

Billig's piece is a classic instance of finely honed critique. But it is also interesting for another reason. It shares in the now common conceptual move of placing artefacts at the heart of analysis. In this case the cigar trimmer 'speaks' to us directly, it cuts through the mystifications involved in the post-hoc positioning of Diana as in any way close to the hearts of 'her' people. What the analyst might need a great many words to accomplish, the cigar trimmer does directly by saying what it is: a truly obscene symbol, an absolutely tainted commodity. This kind of analysis demonstrates the extent to which studies of material culture have, in the past two decades, created a space where both classical and post-Marxian analysis can be rearticulated. The focus on artefacts serves as the lynchpin which holds a revived notion of political economy close to its partner (and rival) category of cultural economy. At stake here is what artefacts actually

¹ This is taken directly from Asprey's of London's website – see <http://www.asprey.com/bespoke-services/>.

say when we allow them to speak to us. Do they tell of the various traumas of their exploitative and violent birthing? Do they scream to us the real history of their production that has been systematically repressed by the artifice of their commodification? Or perhaps they are already a little more knowing, rather more sophisticated in their appreciation of the network of relations which allow them to perform themselves as 'market objects'? Perhaps, when we give it voice in our analysis, the cigar trimmer will perform its own auto-ironic deconstruction of cultural logic of the market which ultimately placed at the scene of the Paris crash?

To some, it is, of course, the very height of theoretical over-exuberance to suggest that artefacts 'speak' in any kind of way at all. We are on safer ground with the more modest observation that social relations are highly mediated by the use of artefacts. As Michel Serres has described at length, human relations considered in themselves are lacking in the necessary ballast to hold together social order:

Our relationships, social bonds, would be as airy as clouds were there only contracts between subjects. In fact, the object, specific to Hominidae, stabilizes our relationships, it slows down the time of our revolutions. For an unstable band of baboons, social changes are flaring up every minute. One could characterize their history as unbound, insanely so. The object, for us, makes our history slow. (Serres, 1998: 87)

We delegate to objects the work of forming and maintaining the social bond. Describing the process of this delegation – which is the task that Actor-Network Theory has set itself – is simultaneously the recounting of a history that is made possible by our relationship to artefacts. Whether it be sharing a dinner, parking restrictions, financial transactions or mass communication, our capacity to speak and be heard by others in a meaningful way passes through objects. They grant us the power to do the very things we feel make us human. They give our speech its meaning, since it is through them that we communicate. Some things can indeed only really be said with the gift of a solid gold cigar cutter.

The rather limited powers of the human body and the reach of our otherwise narrowly bounded cognition is vastly expanded when they are augmented by arrays of objects. We can think and do things that are otherwise unimaginable through the affordances of the object-world. How else could we be touched by the deaths of persons in places (and times) that are otherwise remote to us? Artefacts enable a restructuring of the human. They remake us as very different kinds of beings. Anthropologists and psychologists have demonstrated this empirically for some time. To point to one specific body of work, the concept of 'situated cognition' (Lave, 1988) deals with the transformation of our powers of reasoning when different kinds of artefacts are made available. Mundane tasks such as monitoring how much we eat are transformed when something as simple as having the tools to measure the amounts of food stuffs we cook with are provided. Once again, Serres' (1995) work is instructive. He argues that the things we consider to be great scientific-technical advances are underpinned by the constitution of a new object-mediated relationship. The sun dial or 'gnomon', for instance, is revolutionary not because of its role as a measure of time, but rather because it brings the heavens to the earth. It makes the sun and the positions of the stars a calculable part of social relations.

Human history might then be told from the perspective of how artefacts have enabled social, cultural and practical transformation. But is there not also a history of things to be recounted? For they too have been busy. Today we live surrounded by communication technologies, from RFIDs to Bluetooth devices, which are constantly exchanging information and building new relations all around us and through us. Wireless networks of communication, control, and cooperation proliferate in mysterious ways, all speaking an infra-language of organization, inscribing new techniques of governance. That fateful car ride in Paris, for example, could be told equally well from the perspective of networked information flows – from CCTV images, swipe cards, short-wave radio transmissions and digital photographs. Whilst there is ample material here to keep the most avid conspiracy theorist going, the real scandal is that these vast networks of relations between things are no longer shocking. We are well aware that artefacts track, record, calculate and anticipate our every action. From automated credit ratings, biometrics and behavioural profiling through to the mundane recording of our mobile phone signal or ATM transactions, our ‘bare life’ is wrapped in a digital cushion that makes it available for as-yet scarcely imaginable kinds of relations and transactions. Of late, things have been very busy indeed.

The more secure judgement, however, is to say that there is a kind of co-evolution of people and things, where each lends its capacities to the other. The return of dialectical reasoning, or indeed of a classical Marxian analysis of technology, is always possible here. Marxists have long appreciated what can be done by adding electrification to human relations, after all. But the conceptual language which seems best suited to the task would appear to be that developed by Foucault and Deleuze with their twinned notions of ‘dispositif’ and ‘agencement’. Both terms explicitly seek to fold together people and things, codes and relations into arrangements following their own particular logics and inhering in fields of power. An interesting conjunction can be found in the uptake of Foucault and Deleuze in the work of Actor-Network Theory and some forms of Autonomist thought. Hardt and Negri’s Deleuze is of course not the same as Latour’s Deleuze, not least with respect to the role played by affective labour, but neither do they inhabit entirely different conceptual universes.

Hardt and Negri’s (2000) work also suggests, through the notion of ‘anthropological exodus’, that the co-evolution of people and things may well have reached some form of critical moment. In some oft cited passages they allow themselves to speculate that what may be required of the human body in the face of the dense thing-networks of power may be nothing short of revolutionary:

In the dark world of cyberpunk fiction, for example, the freedom of self-fashioning is often indistinguishable from the powers of an all-encompassing control. We certainly do need to change our bodies and ourselves, and in perhaps a much more radical way than the cyberpunk authors imagine... The will to be against really needs a body that is completely incapable of submitting to command. It needs a body that is incapable of adapting to family life, to factory discipline, to the regulations of a traditional sex life and so on. (Hardt and Negri, 2000: 216)

Hardt and Negri are not the first to have seen the human body as ill-suited or ‘badly designed’, as Antonin Artaud put it, to cope with the demands of a grand refusal of codified life. Neither are they the first to point to the ‘modern-primitivism’ of ‘piercings and tattoos, punk fashion and its various imitations’ (Hardt and Negri, 2000: 216) as

forming the vanguard of social-corporeal transgression. But they do make a crucial link between the state of things and the state of humans. If subjectivity is rendered into a loose cloud of thoughts, memories and dispositions when it is articulated through networks of technical relations, then there is no return possible to a version of humanism that could catch and bottle the subjective, like a child clapping their hands to trap smoke. A transhumanism that takes bodies and subjectivities as sites for augmentation and experimentation – whether literally in the form of body modification, or practically through affective labour – appears to be the escape route to follow.

Transhumanism has its own history, which often makes for disappointing reading. A cursory engagement with the thought of the Extropian movement, for instance, is enough to convince that the revolution will not transhumanise (see Terranova, 1996). Body modification, or rather, the overcoming of the supposed limitations of the flesh, such that subjectivity might be ‘uploaded’ into new material/informational modalities, seems to be the hallucination of those dosed on capital in its purest forms. Put in more mundane terms, the drive to remake the body, to render it more flexible, more creative and hence better suited to the flows and mutations in capital itself is scarcely an act of transgression. It will take a hell of a lot of piercings before the factory cannot find a use for you. And the telos of many transhumanist arguments is to discover that the body has always been the site where this movement of transgression and subsumption has been played out. We have never been human, we have always been transhumanist/cyborg/posthuman. Donna Haraway (1991) had cogently established that point some years before Diana successfully transformed from corporeal being to pure hallucinatory media-borg.

Haraway’s work in recent years has pointed to a different kind of transformation. The shifts in the industrialization and commercialisation of the contemporary bio-sciences do represent an epoch defining movement. When eating and drinking constitutes a political act (e.g. GMO’s, bottled water), when sociality is electively defined through association with others who share similar genetic or biological impairments or enhancements (what Rabinow, 1992, called ‘biosociality’), and when we arrive at the curious proposition that ‘mobilised bio-science’ may be able to create an ecological utopia out of seeming disaster by altering the very terms of life (at a price), then the riddle of the relation between the cultural and the economic no longer seems to suffice. We are faced with a ‘biologization of political economy’. Here the difference between people and things, bodies and commodities, seems very moot indeed. What ontological categories can we conceivably draw upon to make sense of such a monstrous situation?

These special requests and challenging commissions were debated at the conference *The State of Things: Towards a political economy of artifice and artefacts* organised by the Centre for Philosophy and Political Economy (CPPE) at the University of Leicester, UK in Spring 2009. In this special issue we present a selection of papers from that conference. In our call for papers, we asked contributors to consider potential links between Actor-Network Theory and Autonomist thought, between these two varied approaches to engaging with artefacts. It became apparent that such an approach necessitated passing through the question of post- and trans-humanism. The five papers collected here display a range of responses. Johan Söderberg and Adam Netzén offer a

provocative juxtaposition of ANT and post-Marxism which they find equally lacking in historicity. Anna Feigenbaum focuses on a specific artefact – the ‘global fence’ that provides the technical support for a range of common exclusionary practices – to draw out the value of ANT informed analysis of political struggle. Dimitris Papadopoulos engages with Hardt and Negri’s anthropological exodus and sketches out an embodied alter-ontology of ‘insurgent posthumanism’. Norah Campbell and Mike Saren approach posthumanism from the direction of capital, and demonstrate that the ‘monstrous’ language of flow and becoming may not have the liberatory potential we often imagine. Finally Elizabeth R. Johnson goes straight to the ‘belly of beast’ by exploring the contradictions and possibilities offered by innovations in contemporary bio-science.

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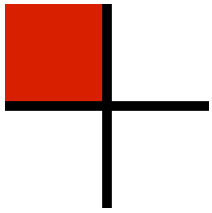
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When all that is theory melts into (hot) air: Contrasts and parallels between actor network theory, autonomist Marxism, and open Marxism*

Johan Söderberg and Adam Netzén

abstract

This article compares Autonomous Marxism, Open Marxism and Actor Network Theory (ANT) through examining how they treat the sticking point of contingency. These schools of thought share a common enemy in perspectives stressing structural factors. The first two stress the subjective standpoint of class struggle, whereas ANT emphasises agency. The Open Marxists and the ANT scholars typically make their case by arguing against dichotomous modes of thinking in other strands of Marxism or sociology. However, the former draws upon Hegelian philosophy and its attempt to transcend the subject-object polarity, while the latter builds on post-structuralism and espouses an immanent ontology. Here, ANT share a common ground with parts of Autonomous Marxism. Despite these different points of departure, critics of respective theory have reached similar conclusions. If an awareness of objective causes and/or structures is removed from the analysis, the risk of voluntarism or quietism looms large. Although we share this critique, we would like to heed the warning against reified categories and dichotomous thinking raised by the three traditions above. Our argument is that resources for solving this dilemma between contingency and stability can be found in a more historicist way of thinking which all three have failed to utilise.

Introduction

This paper investigates the theoretical similarities and differences between, on the one hand, Autonomist Marxism and Open Marxism, and, on the other hand, Actor Network Theory (ANT) and related tendencies within constructivist Science and Technology Studies (STS). Briefly put, Autonomist Marxism is distinguished by its advocacy for struggles which take place outside political parties and labour unions, and, correspondingly, its inclusion of groups other than the archetypic, blue-collar worker. Theoretically it offers an innovative reading of Karl Marx where the class struggle stands at the centre of the analysis, as opposed to, for instance, the economic-political side of Karl Marx (Dyer-Witheford, 1994; Bowing, 2004). There are many different

* We would like to thank Nathaniel Tkacz and Reijo Miettinen, as well as the reviewers and editors of this journal, for having given us feedback on earlier drafts of this paper.

positions which sort under the epithet 'Autonomist Marxism'. Here we will focus on the version associated with Michael Hardt and Antonio Negri (2000; 2004). The group gathering around the label 'Open Marxism' is a smaller and more uniform stream of thought. The Open Marxists are closely related to the Autonomist Marxist tradition, but they depart from Antonio Negri's version of it in significant ways that will become clear later in the article. Finally, a very large and heterogeneous number of scholars count themselves as 'constructivist STS'. We will not give an account of the complex relations within this discipline, a task which has been eminently done elsewhere (Hacking, 1999; Zammito, 2004). For the most part, we will speak about the ANT tendency within constructivist STS, chiefly represented by Bruno Latour, John Law, and Michel Callon. However, some of our arguments could apply equally well to Donna Haraway's cyber-feminism (1991) and some related sub-divisions within the STS discipline (Pickering, 1999; Jasanoff, 2004; Mol, 2002)¹. Although their terminologies differ, one thing these authors have in common is their ambition to overcome dichotomous modes of thinking. Some polarities typically challenged by them are agency/structure, mind/body, society/nature, human/machine and micro/macro. They try to develop alternatives to these polarities through concepts such as 'network', 'hybrid', 'cyborg', 'mangle', 'co-production' etc. This strategy is invariably pursued through a 'flat ontology'. This means they refute any division between surface phenomena and the essential in their accounts of reality. Open Marxism also strives to overcome dichotomous thinking, here spoken of as a duality between the object and the subject. The crucial difference is that this line of thought rejects the kind of flat ontology espoused by constructivist STS thinkers.

Our study will focus on these common interests and points of divergence. Unfortunately, these traditions cannot be compared in a neat, schematic order since their ideas criss-cross each other on multiple planes. For instance, many constructivist STS researchers and Open Marxists are preoccupied with questions about epistemology. This is less of a concern in the version of Autonomist Marxism developed by Hardt and Negri. At the same time, however, the latter two authors and constructivist STS scholars share a common heritage in a post-1968, post-structuralist current of thought. Pride of place is here given to philosophers like Gilles Deleuze, Michel Serres and Michel Foucault. A common denominator of this current of thought is its hostility towards Hegelian philosophy (Descombes, 1980). Consequently, it is no surprise to find

1 Constructivist STS is a very rich tapestry, and never more so than when constructivist writers are confronted with criticism from their opponents. A case in point is Sheila Jasanoff's response to Harry Collins' and Robert Evans' negative assessment of the legacy of constructivist STS theory. They have, in her opinion, collapsed distinct positions into a single, straw-man target (Jasanoff, 2003: 393). The argument we are trying to pull off here is a sitting duck for the same kind of objection. It should therefore be stated from the outset that we are aware that there are important variations within the field. For instance, some of the authors listed above have made reservations against ANT on key points (Haraway, 1997; Pickering, 1999: 18-19). Even among the core ANT authors there are divergences. For instance, John Law has recently expressed concerns that Bruno Latour is lapsing from the micro-sociological approach prescribed by ANT (Law, 2008: 642). These quibbles aside, Sheila Jasanoff herself has pleaded for a single heading with which the family resemblance of various constructivist STS positions can be addressed. She has proposed the idiom of 'co-production' as a catch-all term (Jasanoff, 2004: 18). It is this commonality which we are interested in here. Finally, it should be clear that we are not concerned with *social* constructivism, that is to say, those writers who still find it meaningful to distinguish between society and nature.

assertions in Hardt and Negri such as: 'In short, Hegel's history is not only a powerful attack on the revolutionary plane of immanence but also a negation of non-European desire.' (Hardt and Negri, 2000: 82). Likewise, the rejection of Hegel's dialectics is a given when ANT scholars set out to deconstruct the dichotomy between agency and structure. This bi-polarity is instead "flattened" into a single plane of immanence, here known as a 'network of actants'.²

The Open Marxists, in contrast, are no less hostile towards the intellectual trend of post-structuralism. Their strategy to overcome the duality between object and subject is grounded in Hegelian dialectics (Psychopedis, 1992; Holloway, Matamoros and Tischler, 2009). Open Marxists have thus placed themselves in continuity with an older lineage of Hegel-inspired readings of Karl Marx (Avineri, 1968; Hyppolite, 1969). In spite of this fundamental difference, there are also times when the boundary between constructivist STS and Open Marxism blurs. In this article we will focus on their respective critiques against allegedly untenable dichotomies between structure and agency. Leading on from this, their epistemological critiques have been used as springboards for attacking a common enemy of theirs, i.e. traditional sociology. In the case of the Open Marxists, the direct target of their critique is structuralist tendencies within other Marxist traditions. Although structuralist Marxism is primarily associated with Louis Althusser and his disciples, the inclination to refer to structures has spread much further afield. Every account of capitalism which tends towards a structural explanation is considered a legitimate target for the Open Marxists (Bonefeld, Gunn and Psychopedis, 1992). The structuralist tradition in mainstream sociology goes back to Talcott Parsons and Émile Durkheim. These two founding figures have, however, been made to stand in for the discipline as a whole in Bruno Latour's charge against sociology (Latour, 2005; Law, 2008).³

2 In this way, ANT has launched its own branch of post-humanism where humans and things are treated 'symmetrically'. Post-humanism has accentuated the normative quagmire already latent in the broader, post-structuralist current of thought. Numerous critics have stressed that these ideas cannot support normative standpoints without implying assumptions which are external to the anti-foundationalist epistemology (Rose, 1979; Anderson, 1992; Fraser, 1989). This has not, however, discouraged proponents of post-humanism from attributing an emancipatory potential to their critique of liberal-humanist narratives. Such claims have most candidly been put forward by adherers to 'cyber-feminism'. In more subdued forms, however, the same undertones can be traced in the ANT-and-after literature as well. In hindsight, it is evident that post-humanism can do as good a job as humanism in bracketing up the powers-that-be (Hayles, 1999; Feenberg, 2000, Bartlett and Byers, 2003; Wajcman, 2004). Indeed, what could better exemplify the post-human subject than the modern corporation who has been entitled legal status as a juridical person (Rowland, 2005)?

3 The legitimacy of the social-natural divide, and, by extension, of sociology as such, was the central issue of contestation in the so-called 'Chicken Debate'. The chief defenders of the methods of sociology were Harry Collins and Steven Yearley, while Steve Woolgar and Bruno Latour led the charge. The articles in this exchange can be found in an anthology edited by Andrew Pickering (1992). Many more STS scholar have offered their commentaries on the Chicken debate (de Vries, 1995; Shapin, 1995). As concerns Latour's *et. al.* refusal to acknowledge anything that can be called 'social', Philip Mirowski and Edward Nik-Khah have drawn a parallel between ANT and 'operational research'. Operational research grew out of the efforts of the American army in the aftermath of the Second World War to improve the capabilities of the soldiers by incorporating ideas from group psychology. Mirowski and Nik-Khah demonstrate that there are many common ideas in ANT and

We remain unconvinced that either group has been successful in their striving to dissolve dichotomous thinking and fixed categories. Here we find ourselves in agreement with the critique raised against Open Marxism by more traditionally oriented Marxists. The refusal to make analytical distinctions between agency and structure has resulted in little more than a one-sided bias towards agency. Furthermore, this failure has often been covered up behind a writing style bordering on the hyperbolic (Callinicos, 2005). Interestingly, similar charges have been made against ANT by some of its critics (Amsterdamska, 1990; Gingras, 1995). In order to avoid misunderstandings, we should immediately clarify our own standpoint. We agree with ANT and Open Marxists that ‘social facts’ and categorisations are historically developed, and thus subject to continuous transformations. However, by stressing the radical *historicity* of the world, we do not merely acknowledge that everything is in a state of flux, but also that the pace of change is differentiated. In fact, the same argument can be extrapolated from the key tenet in ANT that entities are radically heterogeneous. This would seem to imply that it takes different time to re-construct different things. In other words, there are variations in temporality which in turn compels social theory to take account of ‘processes of structuration’.⁴

Our point of departure is historicist, which leads us to stress the double character of the world - flux *and* relative stability. It is from this perspective that we will scrutinise the claim about contingency made by ANT scholars and Open Marxists, as well as the epistemological conclusions they draw from this claim. In short, both of these theories interpret the world as constituted by the perpetual unfolding of networks of actants/class struggle. Subsequently, they insist that this contingent process undermines all stable, ‘social facts’ by which society could be explained and ordered. It is a matter of some irony that this claim about contingency is passed off as ahistorically and universally valid. In the second half of the article, we will historicise their argument. We attribute the surging popularity of what we elect to call ‘Constructivist Marxism’ and ‘Bourgeois Autonomism’ to their attempts at theorising capitalism at a point when Marx’s prophecy ‘all that is solid melts into air’ has, in a fashion, been fulfilled. Our counter-argument is that this historical situation requires of us, as activists and/or politically engaged scholars, to move in the opposite direction. That is to say, we need to think carefully about what it is that stays the same in the perpetual flow of change and newness.

Two insurgencies against (Marxist) sociology

In this section, we will argue that the genesis of Autonomist Marxism, and, by extension, Open Marxism, is similar to the one of ANT. The common point is that both traditions emerged against a background setting dominated by Marxism or Marxist-

operational research. In particular, both collapse the distinction between man and machine and they share a hostility towards sociology (2008: 95).

- 4 The term ‘structuration’ originates from Anthony Giddens’ proposed ‘theory of structuration’. His book provides a well-judged account of the ‘agency versus structure’ dilemma in social theory (1979). Another resourceful overview of this thorny issue, posted from within a Marxist tradition, has been provided by Alex Callinicos (2004). In the context of the present discussion, we wish to highlight one point made by both of these authors and which we are in accord with. It is of utmost importance that temporality is at the heart of any reflection on agency and structure.

inspired sociology. Autonomist Marxist thought was strongly influenced by the struggles in Italy in the 1970s (Wright, 2002). In those days, the ‘scientific’ branch of Marxism was still a dominant current (Gouldner, 1980). Opposition against this orthodoxy was a crucial component in the intellectual maturation of key Autonomist Marxist thinkers. One of their targets were those Marxists who elaborated on the political-economical writings of the mature Karl Marx. This branch of mainstream Marxism sought to lay bare the economic laws of capitalism. If the hypothesis about the ‘falling rate of profit’ could be proven to be correct, these writers hoped to strengthen the claim that the internal contradictions of capitalism would make a crisis and a final showdown between capitalists and workers inevitable (Mandel, 1978). Another target of the Autonomist Marxist critique was a tendency in orthodox Marxism to periodize capitalism according to a schematic understanding of historical materialism. This line of thought took foothold in some ambiguities in Marx’s writings, although the more rigid versions of historical materialist thinking are nowadays commonly attributed to Friedrich Engel’s editing of Marx’s texts (Levine, 1973). Here the termination of capitalism was thought to have been laid down by the continuous, incremental development of the ‘forces of production’ which caused a growing mismatch with outdated ‘relations of production’ (Cohen, 2000).

These two strains were challenged by people who objected to the inclination in orthodox Marxism to stress ‘objectivist’ factors for explaining capitalism. A key text was Mario Tronti’s ‘Lenin in England’, originally published in 1964. Tronti complained that Marxists tended to start their reflections with capital instead of with the workers. It led to a bias towards explaining everything with the internal laws of capitalist development. Tronti asserted that the development of capitalism was determined by class struggle: ‘At the level of socially developed capital, capitalist development becomes subordinated to working class struggles; it follows behind them, and they set the pace to which the political mechanisms of capital’s own reproduction must be tuned’ (Tronti, 1979: 1). Tronti’s article contains the seeds of what Yann Moulier considers to have been the two major discoveries of the Autonomist Marxist tradition. Firstly, the priority assigned to class relations as opposed to the forces of production. Secondly, the elaboration on Marx’s idea of the real subsumption of labour under capital as a process which is not restricted to the factory but has come to encompass the whole of society (Moulier, 1989). These insights led on to an imaginative re-reading of Marx where the limelight was put on the contingency and the open-endedness of class struggle. It was from the vantage point of contingent class struggle that the rigidity of the categories deployed by orthodox Marxists could be attacked (Dyer-Witford, 1994; Bowring, 2004). Harry Cleaver took the bull by the horns by studying Marx’s *Capital* in the light of this new insight. Instead of looking for a matrix of economic laws in the book, he interpreted it as a tactical guide for political struggles. The constructivist implications of his argument is evident from how Cleaver turns the table on objectivist explanations for capitalism: ‘There are certainly regularities, or “laws”, of commodity exchange just as there is a logic to the commodity-form itself, but that logic and those laws are only those which capital succeeds in imposing.’ (Cleaver, 2000: 77).

Now turning to the ANT tendency and related currents of constructivist STS, it too begun as a tiny insurgency against an intellectual milieu permeated by Marxist-inspired sociology. As a nascent discipline STS had several roots going back to Marxism

(Werskey, 2007). Most important perhaps is the Frankfurt school and its critique of positivism and empiricism as reflections of capitalist ideology. Such assertions were later backed up by more historically oriented works. The beginning of the scientific revolution was anchored in the upsurge of a market economy, first in ancient Greece (Sohn-Rethel, 1978) and then in the Renaissance (Zilsel, 2000). These critiques of science, ultimately stemming from a Marxist analysis, influenced one of the founding traditions of the STS discipline, the Edinburgh School. Members of the Edinburgh School tried to relativise the truth-claims of science by demonstrating the class background of scientists and how the organisation of science was tied up with larger, socio-economic structures and interests (Barnes, 1977). In parallel with the critique launched against natural science and its truth claims, another branch of the STS discipline was scrutinising how the development of technology was tied up with capitalist organisation and hierarchies. One important source of inspiration was the environmental movement and its call for a small, alternative technology to replace industrial mass production (Slack, 1984). Another influence was Harry Braverman's portal work on how machinery is deployed in the factory to deskill workers and put trade unions on the defensive (Braverman, 1974). Several sub-disciplines grew from this exchange, such as labour process theory and Computer-Supported Cooperative Work, in addition to concrete attempts at reforming the shopfloor, out of which The Scandinavian School was the most radical expression (Ehn, 1992).

Bruno Latour and Steve Woolgar made their names by breaking free from these openly leftist, partisan traditions within the early STS discipline. Their iconic laboratory study was an eye-opener in that they stoutly refused to take account of any larger, socio-economical structures for explaining science (Latour and Woolgar, 1979). In hindsight, this omission can be interpreted as a reaction to the dominant approach at the time of explaining science by studying its 'external' conditions (Shapin, 1992). This was the method of choice of the Marxist critics, of course, who were bent on revealing the origin of Big Science in the military-industrial complex. But it was equally the standard procedure of a more conformist wing of sociology of science led by Robert Merton. A defining trait of early laboratory studies, out of which ANT emerged, was the exclusive focus on the micro-sociological case study. This approach has sometimes been termed 'methodological internalism' (Knorr-Cetina and Mulkay, 1983). The appeal of methodological internalism might consist in that it takes the consequences of the sociologist's critique against the scientific method to its logical conclusion. If STS researchers question the practices of natural scientists, i.e. to postulate general laws based on individual observations, then there can be no safe haven for social scientists doing the same thing (Latour, 1999a). Following from this basic insight, a row of STS scholars influenced by the early laboratory studies have eschewed macro-sociological terminology and explanations.⁵ Their approach consists of a strong emphasis on the

5 The far-reaching consequences of this rebuttal of larger, socio-economic structures has been a central point of contestation (Aronowitz, 1988; Amsterdamska, 1990). In a widely read response to his critics, Bruno Latour asserted that his method could be used for analysing the same topics otherwise spoken of with macro-sociological terminology. He argued that there are no limits to how far the local network can be stretched. Subsequently, by extending the analysis of the network outwards, the local study can be made to cover circumstances normally categorised as 'macro' (Latour, 1983). Even though this might be true in theory, such an undertaking would be very cumbersome. Indeed, a glance at the record of the last three decades of constructivist STS research shows that some topics have been

local, the emergent and the multiple (Mol, 2002). In his review of the relation between ANT and mainstream sociology, John Law upholds that a deep-seated scepticism towards macro-sociological explanations is the chief strength of ANT (Law, 2008). This attitude is not as exceptional to ANT as John Law makes it out to be. His standpoint sits very well with the larger, intellectual trend which has dominated the social sciences for the last three decades and where ideas about transcendence, grand narratives, totalising visions, universal truth claims etc. are repeatedly denounced (Webster, 2005). We stress this point because the sharp end of that argument used to be pointing at the critical and/or emancipatory claims of leftist Hegelianism and its modern off-spring, Marxism (Jameson, 2002).

Two paths beyond the structure/agency dilemma

In this section, we will make a more direct comparison between Autonomist Marxism, Open Marxism and ANT. The first observation which jumps out when these traditions are set next to each other are their deep-seated, political differences. It is noteworthy that the most fierce critics of ANT are found in the leftist and activist wing of the STS discipline. The bottom line of this critique is that ANT, and, sometimes, constructivist STS in general, has resulted in political quietism. Defenders of the theory have consistently denied this accusation and countered that they offer a new way of thinking where everything is political: ‘ontological politics’. (Law, 1986; Law, 2009).⁶ Be that as

disproportionately under-researched, such as military technology (Woodhouse, Hess, Breyerman, Martin, 2002) or technology at the point of production (Oudshoorn and Pinch, 2008). Hence, there are good reasons to suspect that things like geopolitics and political economy are systematically misrepresented when the method of choice is methodological internalism.

- 6 The iconic reference here is Langdon Winner’s attack on the ‘political emptiness’ of the epistemological radicalism of the academic STS discipline. Basically the same charges have been made repeatedly by many other leftist, activist STS researchers (Woodhouse, 1991; Martin, 1993; Winner, 1993; Radder, 1998). Some critics believe that this apolitical bias could be amended if constructivist STS scholars applied their theory to different, politically more engaged, topics (Woodhouse, Hess, Breyman and Martin, 2002). Others think that quietism is inscribed in the basic assumption of these theories, out of which ANT is held to be particularly problematic. This point is developed by Philip Mirowski and Edward Nik-Khah in their assessment of Michel Callon’s attempt to apply ANT to the economy. Callon’s attempt, they argue, has made manifest how the underlying assumptions of ANT resonates with the premises of mainstream economic theory (Callon, 1998: 50-51; Callon, 2002; Mirowski and Nik-Khah, 2007). Mirowski and Nik-Khah are not the first critics to see an affinity between the network metaphor of ANT and the way liberal economists look at the world through the lens of free markets. Focus is exclusively placed on the exchanges between individual actors while the theory is indifferent towards inherent qualities of the actors and/or levels of meaning (McClellan, 1996; Vandenberghe, 2002). The drastic move of purging macro-sociological concepts from ANT has, according to the same critics, resulted in little more than new clothes for a tried-and-tested, methodological individualism (Mirowski and Sent, 2008; Kirkpatrick, 2008). As is known from classical liberalism, atomistic worldviews of the sort renders the world in a Machiavellian or Hobbesian light where everyone-fights-everyone. Indeed, this is another critique which has frequently been levelled against ANT (Shapin, 1995). Olga Amsterdamska remarks: ‘[E]quipped with this Machiavellian view of the world around him [...] Latour’s outsider sees only attempts to dominate, strategies for winning battles, means of attack, trials of strength, and other forms of violence’ (1990: 496). This reminds us of what Marshall Sahlins described as ‘the current obsession with “power” among social scientists and cult studs, a kind of *power functionalism* that likewise dissolves the most diverse cultural forms in an acid bath of domination-effects’ (Sahlins

it may, it is clear that the new take on politics offered by ANT scholars has not calmed their left-leaning critics. Reversely, in texts by key ANT thinkers the activist wing of STS tend to be summarily dismissed. Bruno Latour would probably be the first one to protest against an attempt at linking ANT with Marxism. Among other things, he has expressed his thankfulness that the fall of the Berlin Wall and related events ‘[...] are burying the old critical mole in its own burrows.’ (Latour, 1993: 8). In his polemic against mainstream sociology, he has been particularly unforgiving towards ‘critical sociologists’ who believe themselves to be doing ideology critique (Latour, 2004a; 2005). Latour’s aversion towards critical standpoints in general, and Marxism in particular, is echoed by many of his followers (Whatmore, 1999; Lepinay, 2007). Noel Castree has complained that ANT scholars tend to dismiss Marxism without having engaged seriously with the texts of Karl Marx or acknowledging the existence of sophisticated Marxist traditions. Nevertheless, Castree believes that a weak version of ANT could benefit from and contribute to the development of Marxist theory (Castree, 2002). We are not convinced by Castree’s proposal. However, if such an attempt were made, then the best chances for a dialogue would be between ANT and the Negri-tendency of Autonomist Marxism. Michael Hardt and Antonio Negri are sometimes called ‘post-structuralist Marxists’ (Morris, 2004). They have earned that epithet due to their attempt to synthesise Karl Marx with the writings of Michel Foucault and Gilles Deleuze (Hardt and Negri, 2000). The same two philosophers have been no less influential on the intellectual development of ANT (Law, 2004).

Indeed, many of the statements of Hardt and Negri correspond with ideas in ANT and related constructivist schools of thought. One of the cornerstones of ANT is its commitment to the principle of treating humans and non-humans symmetrically. The same idea resonates in Hardt and Negri’s endorsement of Spinoza. They cherish the old philosopher precisely for his refusal: ‘[...] to accord any laws to human nature that were different from the laws of nature as a whole’ (2000: 91). In spite of this shared, philosophical heritage, the overlapping between ANT and Autonomist Marxism is far from perfect. As regards the main concern of this paper, namely, the relation between agency/structure or class struggle/laws of capitalist development, Hardt and Negri have a mixed record. Rhetorically, at least, they want to position themselves close to the agency-end of the spectrum. Or, in a more Marxist-sounding jargon, Hardt and Negri stress the subjective standpoint of the proletariat as the motor of history. They contrast that position with the aspiration of orthodox Marxism to unravel the objective laws of capitalism. However, Hardt and Negri’s affirmation of class struggle leads on to a periodization of capitalism which culminates in post-Fordism. The idea of a transition from Fordism to neo/post-Fordism builds on work first done in the so-called Regulation School (Aglietta, 1987). Concurrently, the Regulation School is one of the primary targets of writers associated with Open Marxism (Bonefeld, and Holloway, 1991). In this strain of thought, as well as in some versions of Autonomist Marxism which reject Hardt’s and Negri’s position, any attempt at periodising capitalism according to some ‘objective’ criteria, such as Fordism/post-Fordism, is looked upon with suspicion. Such an endeavour results in the class struggle ending up playing second fiddle: ‘In short, the

2008: 12). Hence, when John Law and others defend themselves against accusations about quietism by arguing that in their ‘ontological politics’ *everything* is political, they have in fact conceded very little. At least not more than Hobbes did.

regulation school stresses the permanence of structures, and tends to overlook human subjects, their changes and what is happening with the disorganisation and reorganisation of social relations' (Gambino, 2003: 91).

Subsequently, the baggage of the Regulation School in the writings of Hardt and Negri has been taken to task. Werner Bonefield protests that Hardt and Negri's insistence on class struggle falls short because they tend to externalise subject from structure and juxtapose the two as opposing contrahents. For this reason, he says, Autonomist Marxists tend to reproduce the dualism between voluntarism and structuralism. They differ from the Regulation school only in so far that emphasis is placed on the first instead of the second pole. Bonefield believes the dualism between subject and object, agency and structure, etc. can be overcome through a dialectical movement where labour exists *in and against* capital (Bonefield, 2003). In a similar vein, John Holloway reproaches Negri and Hardt for their (mis)interpretation of Hegel's dialectic as a philosophy of order and synthesis (2005: 172). Echoing Bonefield's argument outlined above, Holloway declares that their rejection of dialectical thinking is consistent with their inclination to periodise capitalism in a rigid fashion.⁷ The risk with such an approach is that reified categories are taken at face value and theory and observations are built around these erroneous assumptions. Social change will then appear as something chiefly happening in the transition from one paradigm to the next: 'Society is painted as being relatively stable during a certain period, and in this period we can recognise certain solid parameters' (2005: 170). Hardt and Negri's affirmation of post-structuralist theory seems to place them closer to cyber-feminism and related, ANT-and-after styles of thinking. Even so, we believe that anyone from the latter tradition could subscribe to the critical remark made above by John Holloway.

We suspect that the rhetorical opposition between, on the one hand, Open Marxism, and, on the other hand, the post-structuralist theories which autonomist Marxism and constructivist STS build upon, invites to an overstatement of their differences. It is true that the Open Marxists are eager to denounce Foucauldian and Deleuzian influences and foreground dialectical thinking instead. However, everything hinges on what kind of dialectics we are speaking of. John Holloway is anxious to portray dialectics as an open-ended movement of negation. Correspondingly, he downplays the role of synthesis in Hegel's thought (Holloway, 2005; for a critique, see McNaughton, 2008). This particular reading of dialectics is heavily influenced by the thinking of Theodor Adorno. The 'negative dialectics' of Adorno was recently endorsed in an edited volume by key Open Marxist authors (Holloway, Matamoros and Tischler, 2009). It is noteworthy that Adorno developed these ideas when he had grown dismayed about the ability of the working class to withstand the persuasive powers of the administrated world. Consequently, any foothold from which resistance could be mounted against capitalism seemed to have been lost (Adorno, 2000: 41). Corresponding with this

7 At closer inspection, however, it turns out that the vigilance of John Holloway against periodisations is not as unconditional as it first seems. In a passing note, he refers to the different qualities of class struggle in slave societies and feudalism as opposed to those in capitalism. He sees no need to problematise this partitioning of history into distinct episodes (Holloway, 2005: 30). Presumably, Holloway thinks that this allows him to speak with more precision about present-day class struggle as an antagonism between capital and labour. One might then wonder why the same does not count for periodisations within capitalism, for instance, between Fordism and post-Fordism?

political assessment, he became increasingly suspicious of a key postulate of Hegelian Marxism, namely its investment in Totality as the privileged point of view for unravelling Truth. The totality was now on the side of the totally administrated world, hence, truth could at best be glanced in the fragmentary (Jay, 1984). Adorno came to stress nonconceptuality, individuality and particularity. In this way, he ended up with an approach which in many ways resembles latter-day, post-structuralist theories about *différance* (Adorno, 2000: 8; Vogel, 1996: 95). John Grumely points at such an rapprochement between the thinking of Adorno and Michel Foucault and concludes that, in both cases, the political outcome has been disappointing:

Negative dialectics arrived at a theoretical and political *cul-de-sac*. Unable to provide a positive account of emancipatory possibilities, it ceased to seriously grapple with the practical problems of the immanent contradictory dynamics of modernity. (Grumely, 1989: 210)

Of course, the positions of Adorno and Foucault cannot be collapsed. Open Marxists are attracted to Adorno's negative dialectics because it provides them with a counter-position to the Deleuzian notion about non-antagonistic multiplicities. The Open Marxists believe, not without reason, that the latter idea is complicit with a liberal, pluralistic, and appeasing worldview (Bonnet, 2009). Still, our reasoning above indicates that, in spite of their endorsement of dialectics, the Open Marxists are closer to their intellectual adversaries in the post-structuralist camp than they want to let on.

As for ANT, it unmistakably stems from an anti-Hegelian current within French philosophy. This circumstance is underlined by Bruno Latour's summary dismissals of the dialectical method (Latour, 1993: 57). Again, however, this rhetorical posturing might lead to an overestimation of the differences between the positions under examination. Going against the grain of the self-accounts of the ANT scholars, John Zammito has pointed out subdued traces of dialectic thought in ANT. Among other things, he notices that the goal of ANT scholars to overcome dualistic and *a priori* approaches to epistemology mirrors Hegel's aspiration to resolve the limitations of Kantian thinking (Zammito, 2004). One can also find commonalities between Hegelian Marxism and ANT, for instance, in the stress which both traditions place on relational properties as opposed to inherent properties of things. This similarity should not be overstated, however. In ANT, the argument has been pushed to the point where everything is rendered as networks of relations, which leads to some troublesome, normative implications (Kirsch and Mitchell, 2004). Nevertheless, as Reijo Miettinen has underscored, the STS field as a whole wrestles with much the same problematic as Hegelian Marxism. Science and technology could, in a more Marxist-sounding terminology, be described as the process by which the subject creates herself by creating the world of objects through her labour:

The concept of science and technology making is, in my opinion, parallel to the concepts of object-oriented, environment-transforming human activity developed by materialistic dialectics and AT [Activity Theory]. ANT raises the challenge of studying reality as transitional in its becoming and as trajectories of creation. This idea of becoming and change is one of the central methodological ideals of dialectics as well. (Miettinen, 1999: 174-175)

All of this goes to suggest that there are some deep-running similarities which the proponents of respective school are unaware of or do not want to address. Another indication of the same thing is that the two schools have run into similar kind of

objections from their critics. Much of the reservations against ANT boil down to its claim of having overcome the agency/structure dichotomy by treating humans and things symmetrically. Sceptics have protested that this manoeuvre results in little more than a strong bias towards agency (Kleinman, 1998; McLean and Hassard, 2004). In the same vein, opponents of Open Marxism have taken issue with what they perceive to be a flaunting disregard of structural constraints. This point was forcefully made by Alex Callinicos in a review of John Holloway's book *Changing the world without taking power*. He reacted to Holloway's assertion that power rests exclusively in Doing (living labour) as opposed to Done (dead labour/capital). Such a proposition, Callinicos countered, begs the question how capital stays 'in power' (Callinicos, 2005).

This point is analogous with one common objection against ANT, namely, that its rejection of structure has left a blind spot when it comes to explaining stability over time. Of particular concern is the failure of ANT to give an account of the stability of power structures (Barnes, 1981; Bromley, 2004). It might seem as if this objection has already been gainsaid by Bruno Latour's assertion that things are needed to make agreements durable. A case in point is Bruno Latour's well-known argument that even something as seemingly innocuous as hotel keys or speed bumps have 'programs of action' built into their very design (Latour, 1992). When the matter is framed accordingly, however, very little can be said about the *systematic* way in which asymmetrical power relations are upheld by artifacts.⁸ It is partly for this reason that some critics of ANT are convinced that the theory is fundamentally apologetic for the *status quo* (Mirowski and Nik-Khah, 2007). John Holloway and his fellow Marxists can hardly be accused of that. Uncharitable readers have nonetheless suggested that Holloway's scream against capitalism is rather inconsequential. His refusal to concede any ground to structural explanations results in an abstract endorsement of class antagonism which overlooks the historical situatedness of real, social struggles.⁹ As a

8 In addition to the hotel keys (Latour, 1991) and speed bumps (Latour, 1999b: 186) discussed by Bruno Latour, it might seem as if Langdon Winner's well-known example about the low bridges hanging over the motorway between New York and Long Island could make it to the same list. Winner's tale is centred on how those bridges reinforced class- and race structures at the time of their construction. He argued that the city architect, Robert Moses, had specified the height of the bridges with the aim of preventing buses from passing under, thus blocking access to Long Island for those people who depended on public transport (Winner, 1980). Winner's critical intent has not been well received and his case study has been taken to task by numerous constructivist STS writers. Their counter-arguments have hinged on the primacy which ANT and related styles of thought assign to the contingency of interests and the malleability of artifacts. Winner was wrong in assuming, according to his detractors, that the discriminating intent of the designer was successfully embodied in the artifact. Instead Winner ought to have given precedence to the multiple ways in which the bridges could be reinterpreted (Woolgar and Cooper, 1999) or circumvented (Bernward, 1999; Latour, 2004b). This suggests a tension in ANT between its claim about the materiality of things and its stress on contingency. Our conclusion is that the first tends to loose out against the second, at least when the inquiry is concerned with how antagonistic relations, such as 'class' and 'race', are made durable.

9 It can here be illustrative to point at the conclusion which George Katsiaficas draws from his careful, ethnographical study of the autonomist movement:

Although it is extremely problematic to treat social movements as simply conditioned by the form and circulation of capital and the structure of social relations, my analysis suggests that the autonomous movements discussed in the book were partially conditioned by impersonal economic forces and political dynamics. Postmodernists generally sever analysis of social movements from

consequence, Open Marxism fails to give any direction on how capitalism can be resisted in its concrete particularities (Ghigliani, 2005; Callinicos, 2005). This can probably be explained by the animosity of Open Marxists towards empirically oriented sociology. By foregrounding the collection of data and statistics, the latter approach tend to fail to look beyond what already exists. The remedy of the Open Marxists is to advance their arguments from a high theoretical altitude. This strategy miscarries, however, when they reduce every aspect of life to the abstract principle of antagonism at the point of production (Roberts, 2002; Bieller and Morton, 2003; Camfield, 2004). At first, this objection does not seem to touch ANT at all. The hallmark of that theory is the privileged role which it assigns to the individual case study (Law, 2008). Then again, one criticism directed against ANT is that its bold theoretical claims are disconnected from its empirical research (Collins, 1994). Yves Gingras notes that ANT studies typically make strong claims about having overcome dichotomous modes of thinking in the introduction and in the concluding section. In the main body of the text, however, those claims are being contradicted by the more conventional manner in which the case study has been conducted (Gingras, 1995: 128). Park Doing draws much the same conclusion from his close rereading of Steve Woolgar's and Bruno Latour's iconic laboratory study. He accuses them of having dodged the key question, how their startling, theoretical propositions were anchored in their actual, empirical findings. This failure has simply been clouded behind hyperbolic rhetoric (Doing, 2008). Our tentative conclusion is that whether the epistemological critique of the dichotomy between agency and structure originates in negative dialectics or in the flat ontology of post-structuralist thinking, the theoretical argument does not bear out in practice.

Although we have listed a number of commonalities between Open Marxism and ANT, we admit that these points might come across as rather circumstantial. In addition, it is possible to argue that the two camps share the same, historical roots. Their respective polemics against allegedly reified modes of thinking in the social sciences is foreshadowed by George Lukács' seminal work *History and Class Consciousness*. Neither tradition is comfortable with this intellectual debt. As of late, it has become fashionable among ANT scholars to trace the genealogy of their theory. A number of pioneers are being credited as forerunners of their branch of constructivist STS, most notably: Ludwik Fleck, Gabriel Tarde and, more reluctantly, Thomas Kuhn (Latour, 2002; Barry and Thrift, 2007). The legacy of George Lukács, as one might expect, has been passed over in silence. But the old 'philosopher of Lenin' is no less of an embarrassment to the Open Marxists. His scandalous support for the avant-garde as the true bearer of proletarian class consciousness sits badly with their political outlook. It is debatable if Lukács' theoretical insights can be disentangled from his unconditional support for Bolshevism. According to some commentators, the latter standpoint was inscribed in Lukács' endorsement of the Hegelian notion of Totality (Kolakowski, 2005: 1011; Tischler, 2009: 106-107). Both ANT scholars and Open Marxists, although in different ways, have expelled the idea of Totality from their theories. Even so, Lukács' work casts a long shadow on present-day reflections over epistemology and politics. Crucially, he detected the Hegelian movement at work in Marx's political-

such categories, regarding notions of structure as vestigial modernist relics. (Katsiaficas, 1997: 248)

economical texts. This insight would later be confirmed by the rediscovery of the writings of the young Marx. The interpretation of Marxism as a science which dominated at the time could now be challenged through a restoration of Marx as a sophisticated critic of scientism (Amato, 2001). Lukács emphasised dialectics as a means to overcome the dualism between object and subject. He protested against the scientific worldview which he considered to entertain a reified mode of thinking where the world appeared to be frozen into eternal facts and laws. A central target for Lukács' pen was empiricist sociology, both in its Marxist and bourgeois disguises. Hence, many of the arguments he developed resonate well with the statements now being made by constructivist STS scholars. Karl Mannheim repackaged the politically flamboyant critique of Lukács into a less offensive analysis of ideology in general. Thus he laid the foundations for the sociology of science, later to metamorphose into the STS discipline. Lukács' influence on Mannheim was such that the latter has been described as a 'bourgeois Lukács' (Lichtheim, 1965: 187).

Perhaps then we might elect to call Bruno Latour a 'Bourgeois Autonomist'. By the same token, the Autonomists and Open Marxists might be dubbed 'Constructivist Marxists'. In their own distinct ways, they are building on the critique of reified modes of thinking that was initiated by Georg Lukács. The writings of Lukács is nowadays held to be as dead as the proletarian revolution to which he swore allegiance. But his polemic against the scientific interpretation of the world as a collection of facts and laws frozen in time and existing independently of man-made history is more popular than ever. We propose that the application of this critique to the social sciences is the common denominator of Bourgeois Autonomism and Constructivist Marxism, once forked by Mannheim and ever since kept apart by their political differences. The actuality of this kind of reasoning is suggested by the surging popularity of both ANT and Autonomist/Open Marxism among their respective constituencies. Another cursor is that similar-sounding arguments are surfacing in neighbouring disciplines. A case in point is the ideas proposed by Gerald Davis and Doug McAdam from the horizon of social movement theory. They are concerned with neither science studies nor Autonomist Marxism. Their goal is rather to present social movement theory as a candidate for understanding institutional and technological change. While doing so, however, they argue that both mainstream sociology and the concept of class in Marxism are out of touch with an innovation-driven economy. These attempts at analysing the world with fixed and stable categories fall short of capturing the dynamic of a world perpetually transformed by innovations (Davis and McAdam, 2000). The same kind of ideas have circulated among scholars working in the field of communication studies and who look at 'new media'. Calls have here been made for new, analytical tools by which society can be theorised in terms of 'processes of organizing' rather than as a collection of stable organisations. Such analytical tools should put stress on the hybrid character of these new processes of organizing (Bimber, Stohl and Flanagin, 2009: 84).

These ideas resonate with some of the objections raised in constructivist STS against the fixed categories with which classical sociology interprets the world. But the social movement researchers and the communication studies scholars go one step further. They do not shy away from attributing this intellectual reorientation to the development of information technology. It is the acceleration of technological development which

has made a revision of established, social theories necessary (Gane, 2005). ANT scholars and Open Marxists balk at such a proposal. They scent the old base/superstructure terminology which they have fought so long and hard against. Contrary to their own claims and intentions, however, one might suspect that the soaring popularity of Bourgeois Autonomism and Constructivist Marxism reflects the current development of the forces of production.¹⁰ It is not hard to understand the attraction of ontological assertions about plurality and contingency in a time marked by an ascending, perpetual innovation economy. Its effects are manifest from a life-world continuously punctuated by creative destruction and precarious labour demand (Kawashima, 2005). If preferred, the same thing can be approached from the angle of traditional sociology. Zygmunt Bauman has made similar observations about what he calls 'liquid modernity'. It should be noted that Bauman dedicates part of his discussions to how this state of liquidity has put to the test the categories by which sociology knows its object, i.e. society (Bauman, 2000; Pollock, 2007). Thus, the polemic of the STS scholars and the Open Marxists against fixed categorisations and structural explanations in sociology can be located in a broader stream of thought within the social sciences. All of them attempt to develop an updated social theory at a point in time when Marx's famous prophecy 'all that is solid melts into air' has just about come true.

Contingency of class struggle

In this section, we will discuss in more detail how the argument about contingency has been developed in Autonomist Marxism, Open Marxism and ANT. 'Contingency' denotes that something is coincidental, non-necessary, or lacking an essence. In the STS discipline, the claim about contingency was first applied to scientific facts and technologies. The goal was to problematise the notion of scientific discovery as something ahistorically and universally valid. Later on, this argument was famously turned against sociology and the Durkheimian notion of 'social facts'. The outlines of this argument was hammered out in a polemic against the sociological tradition within STS, represented by the Edinburgh School (Sismondo, 2004: 45; Ylikoski, 2001). Steve Woolgar, the chief proponent in this debate, protested that the interests of scientists had been 'backgrounded' in a way similar to how scientific truth claims had been taken for granted at a previous date. He claimed that the notion of interests had replaced scientific facts as an autonomous, explanatory force of science. He charged that 'interests' must be explicated too (Woolgar, 1981). This agnostic stance towards social facts and interest has stayed with ANT throughout its many transformations. For instance, Sheila Jasanoff

10 In saying this, we are doing no more than retracing a now often-made argument which links high-brow, post-structuralist theory with its vulgar Other, i.e. information age evangelism. This link goes all the way back to the indebtedness of 'French theory' in the 1940s and 1950s to American cybernetics (Valentine, 2000: 25; Lafontaine, 2007). Both of these currents of thought entertain the idea that there has been a radical break with the past, roughly dating to the 1960s or 1970s. The former group of theorists identifies a shift in the very structure of Being which has rendered humanist, transcendental and modernist beliefs untenable. The second group of thinkers, more modestly, foresees an end to industrial capitalism and the coming of a post-industrial era (Marx, 1998). In our opinion, the surge of these claims should be seen against the background of the same historical situation, which is to say: late capitalism (Jameson, 1992).

singles out this as a key tenet by which she differentiates between writers who belong to the co-production (constructivist) family and those who do not (Jasanoff, 2004: 31).

Among the social facts that have been eschewed we find (class) interest, power (structure), and references to capital/capitalism. The obvious target of this argument is Marxist-inspired traditions within the STS discipline, such as labour process theory and computer-supported cooperative work. These kinds of studies of industrial relations are said to be flawed because of a 'residual essentialism'. Allegedly, the interests of workers and managers are here taken for granted as stable, social facts. The writers lining up behind this critique advocate instead an approach where interests are understood as something which emerges with every new human-machine hybrid. It is no longer possible to say that a piece of machinery has been designed to further the interest of the managers against the interest of workers, since those interests are contingent (Woolgar and Grint, 1997; Berg, 1998; Pickering, 1999; for a critique, see Söderberg, 2010). The political implications of this argument is unacceptable to Marxists of any brand. Even so, contingency has an elevated position also in the thinking of Autonomist and Open Marxism (Virtanen and Vähämäki, 2004). We will argue that the notion of contingency resonates with one of the main theoretical contributions of Autonomist Marxism, i.e. the concept of 'cycles of struggle'.

In fact, the idea about cycles of struggle and the polemic against interests developed by Woolgar and like-minded constructivist STS writers set out to attack the same target. Both object to an allegedly outdated, rigid understanding of the confrontation between capitalists and (blue-collar, unionised, male) workers. By talking about cycles of struggle, the Autonomist Marxists hope to reformulate the notion of class struggle in an open-ended way that will avoid a foreclosing of emerging and unfamiliar sites of conflict. The ebbs and flows of intensity in the conflict between labour and capital stands at the centre of the theory. On the one hand, capital attempts to define a class composition with a particular distribution of intra- and inter-class relations. The goal is to isolate workers from each other by creating internal divisions and playing up chauvinism, nationalism, racism etc. Autonomist/Open Marxists thereby take account of gender and race without giving up the analytical primacy of class. Thus they answer to the challenge against class formulated by innumerable feminist writers while refusing to follow the lead of the so-called post-Marxists. When capital is successful, the working class is reduced to mere labour power, i.e. the proletariat is subjugated under capital's command. The political defeat of the working class is corroborated by a steady production of surplus value. But labour differs from other commodities in that it resists being commodified. The workers react by trying to redefine internal and external class relations and seek a new ground for unity. One step is to overcome race and similar divisions, another aspect is to invent new identities, interests and methods of resistance. Thus they regroup and become once more a class-for-itself, capable of mounting a renewed challenge against their antagonist. The old class composition that was imposed by capital has once more become an obstacle to the valorisation process. Capital is forced to launch a new wave of restructuring and innovation, and a new cycle of struggle begins (Tronti, 1973; Negri, 1988; Holloway, 1992; Camfield, 2004).

One attractive feature with the 'cycles of struggle' concept is that it provides an explanatory framework for technological change which at the same time is rooted in

antagonistic, social relations. This approach has a major advantage over the kind of contingency propagated by ANT. In the latter theory intentional actants (i.e. humans) have to be brought in *ad hoc* from outside of the network. Although ANT claims to have attached equal explanatory value to humans and non-humans – thereby moving beyond the distinction between structure and agency – a human is nearly always placed at the centre of the network, being responsible for its assembly. The individual inventor-entrepreneur or ‘spokesperson’ is postulated as the starting point for creation and novelty in the ever-evolving network. It is telling that the subject-less and relational ontology of ANT quickly flips into a taken-for-granted, methodological individualism when it is put into practice. The idea of cycles of struggle, in contrast, singles out the formation of a class-for-itself as the constitutive moment of change. Technological and organisational inventions are launched by capitalists as a reaction to growing resistance. In this way, the Autonomist Marxists have managed to maintain the notion of class without having to turn the blue-collar working class into an essentialist, pre-given and universal, ‘social fact’. Or, to put it in ANT-jargon: class does not explain anything but is the matter to be explained.

The concession outlined above is unlikely to reassure constructivist STS researchers. Although the concept of ‘cycles of struggles’ places contingency at the heart of the analysis of capitalism, some relations must be kept fixed in the theory. That is, the opposition between capital and labour is postulated even as the subjectivities of the two antagonists and the terms they are fighting over are continuously being transformed through struggle. *This antagonism is held in place by the totality of capitalist relations.* The antagonism between capital and labour (or, in Holloway’s terminology, between done and doing) is most directly experienced in the clash between the employer and the employee over wage rates, control over work processes, and the length of the working day. It follows that this antagonism cannot be overcome as long as the wage labour relation remains in force. Such a premise is unacceptable to a constructivist STS researcher working in the ANT tradition. The concept of a social totality (or system of relations), with its uncanny, Hegelian associations, was thrown on history’s garbage heap even before the discharge of macro-sociological, allegedly crypto-functionalist, terminology. It will therefore appear to the constructivist STS scholar as if interests and identities (of managers and workers) have once again been made into invariable, social facts.

Concluding remarks

This article has compared ‘Bourgeois Autonomism’ with ‘Constructivist Marxism’. We have argued that these schools join hand in their rejection of structuralist explanations and in their polemic against the allegedly reified categories used by mainstream and Marxist sociology. Furthermore, we proposed that this kind of analysis should be understood against the background of a post-fordist restructuring of the economy. Growing job insecurities, swiftly changing market fads, and accelerating technological life-cycles lend credit to the claims about a contingent life-world. We are doubtful, however, if the right response is to liquidise theoretical categories to the same extent as everything else has been - goods, images, values, etc. We agree with Slavoj Žižek when

he declares that theories which interpret everything as processes and flows have become the official ideology of globalised capitalism (Zizek, 2004).

This observation by Zizek invites us to re-evaluate Georg Lukács' contribution. Lukács' critique was directed against the scientific mindset and its interpretation of the world as a collection of eternally valid laws and facts. Lukács argued that this gaze mirrored the frozen worldview of bourgeois ideology. He enrolled Hegelian dialectics in order to reveal the historical, transitory character of scientific facts, including those facts laid down by sociologists. In a fashion, for the most part unwittingly, constructivist STS scholars have built on this legacy of Lukács and Hegel. The all-important difference is that they have stretched this argument about the historicity of scientific laws and facts to the point where every moment is considered to be emergent and disconnected from any other. In this respect, Angho Giddens' negative judgement about the structuralist penchant is just as relevant when assessing its post-structuralist heirs of today. It is: '[...] a view which tends to exorcise historical explanations in the very acknowledgement that everything is chronically in a state of movement' (Giddens, 1979: 46). In other words, the notion of contingency has been pushed to the breaking point where history is dissolved once again. The outcome hereof corresponds with the ideology of flows decried by Zizek. This *cul-de-sac* can be contrasted with Marshall Berman's reflections over Marx's famous devise that 'all that is solid melts into air'. Berman's insight was that the sensation of living in a time of rupture and novelty has lasted for about three-hundred years. In other words: It has acquired a history all of its own (Berman, 1983). Given this historical juncture in which we find ourselves, an appeal to *historicity* today needs to shift emphasis, from 'history as contingency' to 'history as continuity'. In plain language, it is the relative stability of subjects (humans, classes) and structures (interests, identities, power etc.), which need to be foregrounded in the analysis. Putting the stress here is important not in spite of, but because of, the fact that we are living in a society seduced by dreams about perpetual change and newness.

The most glaring example of the latter is all the touting of the coming of a technologically induced 'revolution'. Sometimes it is called the information revolution, other times it is announced as the bio-medical revolution, later it is said to be the nano-technological revolution, and so on. The common trait of these stories is the promise that a completely new society is waiting around the corner, thanks to new technology. The ills of old, industrial capitalism will soon be swept away. Crucially, this transformation will come about without requiring neither bloodshed nor a redistribution of wealth and power (Dyer-Witheford, 1999). It is these kinds of apologetic narratives which have convinced the Open Marxists to reject the notion of post-fordism. In their opinion, such an assumption necessarily rests on a capital-centric point of view. ANT scholars, on their part, shun the unilinear direction and unequivocal meaning of technological development assumed when technology is viewed as the driver of history. ANT forbids the privileging of any type of entities or dimensions in explanations. The response of writers in both camps is rather similar. Bluntly put, they have countered the futurists with an epistemological critique where dichotomous thinking are rejected. As a consequence, there are no stable categories upon which an analysis of society can lean. Everything is rendered into a seamless flow of change. We do not believe this is the appropriate response. The Open Marxists and the ANT scholars have thereby deprived

themselves of the means to pose the urgent question to the prophets of the next technological revolution: *What stays the same in every new wave of same-but-different?*

In order to ask that question one must acknowledge the relative stability of structures over time. This is not permitted in the flat ontology espoused by ANT, where every entity is allegedly given equal weight and everything is equally in flux. We believe that the Open Marxists are better off in having chosen Hegelian dialectics as their starting point. However, in accordance with Colm McNaughton, we find that the Open Marxists go astray in adopting a one-sided interpretation of dialectics as a continuous stream of negation. Any attempt at reaching a synthesis, of positing something positive - however provisionally - is therefore considered as illegitimate (McNaughton, 2008). A token hereof is that the Open Marxists reject out of hand other Marxist accounts which seek to identify distinct periods in capitalism. The downside of this strategy is clear from the lack of empirical observations and historical specificity to back up their theoretical claims. In objecting to this shortcoming of Open Marxism, John Roberts recalls that the materialist theory of Karl Marx was helped by advances in empirical methods. It reinforced the claim that knowledge about the world flows from contact with it through sensory experiences. He concludes that the Open Marxists need to engage more seriously with empirical research in order for them to give an account of the refracted ways in which capitalist social relations are being experienced by people (Roberts, 2002: 92). This resonates with one of the strongest points of ANT, namely: its advocacy for the point that philosophy should be conducted through empirical case studies, what is sometimes labelled 'empirical philosophy'. However, due to its commitment to methodological internalism, ANT lacks the conceptual tools for seeing the historically differentiated character of processes of structuration, where things change at different paces. Ultimately, this is why we decide in favour of the historicist tradition, where empirical philosophy has long been practiced. Karl Marx's reflections over the role of Louis Bonaparte remains an excellent source of inspiration for how to carry out such an investigation (Norris, 1990: 30; Lavin, 2005). His well-known introductory remark in that essay provides the unsurpassed combination of historical inertia and the possibility of effecting change:

Men make their own history, but they do not make it just as they please; they do not make it under circumstances chosen by themselves, but under circumstances directly encountered, given and transmitted from the past. (Marx, 2001: 7)

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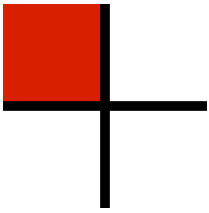
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Concrete needs no metaphor: Globalized fences as sites of political struggle

Anna Feigenbaum

abstract

In this paper I argue for a conceptualization of material fences as artifacts of globalization, or as what I term ‘globalized fences’. I construct this category to bring together a diversity of fences that share similar attributes, including the separation fence in Israel/Palestine, the fence at the U.S./Mexico border, the fences surrounding immigration detention centers and the fences fortifying the temporary sites of global superpower gatherings. From this overview of globalized fences, I move to examine such fences from the vantage point of protest networks. Here I look at two specific types of struggles lodged against, and at the site of, such fences. The first includes resistance that uses the ‘fence as canvas’ and the second at struggles that engage the ‘fence as ICT’. I look at these two sets of protest practices as communicative acts that are able to ‘make fences talk,’ insisting that concrete is far more than a metaphor for the violence of containment.

Specific tricks have to be invented to make them talk, that is, to offer descriptions of themselves, to produce scripts of what they are making others – humans or non-humans – do. (Latour, 2005: 79)

Why fences?

Numerous scholars and journalists have argued that fences – both material and symbolic – stand as a mark of the injustices of globalization. While capital, development projects and private security firms often move freely between nations, people are increasingly contained within fences – in prisons, detention centers, at militarized borders and in ghettoized geographical enclosures. At the same time, fences are erected to protect the mobile neo-fortresses of globalization such as G8 summits, Free Trade Area of the Americas conference, World Trade Organization gathering and Security and Prosperity Partnership of North America meetings. Back in 2002 Naomi Klein wrote, ‘Thirteen years after the celebrated collapse of the Berlin Wall, we are surrounded by fences yet again, cut off from each other, from the earth and from our own ability to imagine that change is possible’ (Klein, 2002: xx). Another eight years on, following the internationally celebrated 20th anniversary of the collapse of the Berlin Wall, such fences remain.

Yet where there are fences, there is resistance. Struggles are lodged from village farmlands, prison yards and public street corners. People's protests take on many forms including: petitions, silent vigils, demonstrations, memorials, town meetings, environmental investigations, court cases, rebel clown brigades and teddy bear catapults. All of which, in different ways, serve as challenges to the construction and operation of fences. While there are many differences that make up each encounter with perimeter security, there is a resonance between people's struggles, something shared that echoes off the concrete and razor wire.

In this paper I propose a model for thinking about current fences as cultural material artifacts of globalization, upon and through which communicative struggles are played out. I use the term fences broadly to include any light weight metal and wood structures designed to restrict or prevent movement. While at times I differentiate walls from fences in structural terms, perimeter security networks are often made up of both. As such, at times I move between fence and wall to look at how they operate in a network, as well as how they function in relation to each other. To pilfer some terminology from the US Department of Homeland Security, I view them together as part of a 'toolbox of fencing solutions'.¹

In addition, as the rhetoric around perimeter security often intentionally obscures differences between 'fences' and 'walls'. A notable example of this can be seen in the different languages used to describe the Israeli 'Security Fence'/'Separation Wall'. Although this structure is made up of both fences and walls – using standard technical definitions – social activists will generally employ the term 'wall' when describing the separation barrier, whereas official government descriptions use the term 'fence'.² A consideration of the distinct physical features of various perimeter-security networks can therefore inform analyses of the political and symbolic communication that surrounds them and gives them meaning.

In what follows I first identify the common features of what I term 'globalized fences' and discuss their role in perimeter-security-networks made up of multiple technologies and people. I construct this category both to create a working subset of research objects and to be able to bring together a diversity of fences that share similar attributes. I then discuss two specific sets of resistance to fences, arguing that an analysis of how perimeter security systems work must look both toward the marketplaces that motivate their construction and the protests that disrupt their operation. Moments of political struggle hold both ethical and methodological significance. As Bruno Latour argues, objects in a network become most visible at times of innovation and breakdown (Latour, 2005: 81-82). It is when the fence is contested, transformed or destroyed, that it is rendered discernable. At these moments, the fence, that flat surface so frequently

1 Items listed in the DHS toolbox of fencing solutions include: steel picket-style fence set in concrete, vehicle bollards, steel beam vehicle fences and concrete jersey walls with steel mesh. See http://www.dhs.gov/files/programs/gc_1207842692831.shtm.

2 For example, the official Israeli Defense Establishment uses the phrases 'Security Fence' and 'Fence Against Terror' (see <http://www.securityfence.mod.gov.il/Pages/Eng/default.htm>), while grassroots campaigns take names such as 'Stop the Wall' (<http://www.stophthewall.org/>) and 'Anarchists Against the Wall' (<http://www.awalls.org/>).

reduced to a backdrop, a landscape, a mere signifier for some larger atrocity, comes to matter as wire and concrete.

Globalized fences

While mass produced metal fencing and barbed wire were not introduced until the 19th century, border and fortress walls that served military functions have been around for thousands of years. The earliest known fortifications were discovered at Jericho in the period 6000-8000 B.C. and the oldest known defended gates are dated back to 5400 B.C. (Keeley et al., 2007: 83-85). Ancient Greek and Roman fortification structures served both as livestock corrals and had defensive military purposes (Keely et al. 2007). The symbolic aspects of these fortifications also date back to this time period. Aristotle's *Politics* suggest that perimeter fortifications should 'contribute to the embellishment of a city' (Lawrence in Keely et al, 2007: 82). As Keely et al. explain, 'walls may be built higher and gate towers longer than military necessity requires to intimidate and impress' (82). Openings in fortifications were also places that people gathered, where rituals and assemblies took place, where trade was conducted and in some cases, where court was held (82).

I would suggest that what Keeley et al. determined as the 'universal features' of historic and prehistoric fortifications remain key features of today's perimeter security networks. Whether built along borders, around bases, prisons or temporary meeting places, the symbolic aspects of these defensive architectures and the communicative or social dimensions of their openings are still of primary importance in understanding how perimeter security networks operate. This project investigates contemporary fences on a global scale, working from a conceptualization of material fences as artifacts of globalization, or what I term 'globalized fences'. These fences can be identified by four commonalities: they serve transnational security functions (particularly in a post 9/11 homeland security context), they are contracted through multinational companies, they are built with materials imported from different nations, and they integrate 'virtual' and physical technologies. In what follows, I'll give a short set of examples of what I mean by each of these criteria.

First, in contrast to previous intra and inter-national security perimeters such as the Berlin Wall, 'globalized fences' serve transnational security functions. Geographer John W. Donaldson, among others, argues that there has been a shift in the justifications for constructing national perimeter security networks from defense against state-to-state conflicts to protection from the threat of smaller factions – terrorists, insurgents, illegal immigrants and smugglers. This is even the case where a fence is built as a national boundary, as can be seen in the case of India/Pakistan and Israel/Palestine (Donaldson, 2005: 174). At present the dominant discourses around security argue that nations without secure boundaries will be potential harbors for trans-national militants and terrorists. This has led to a shift in border security that thinks beyond the nation-state. As Deborah Waller Meyers argues, recent US border security has taken 'a more coordinated inter-agency and inter-governmental approach, as well as greater reliance upon equipment, technology, and support originally developed for military use' (Meyers, 2005: 19).

Fences constructed around superpower gatherings such as G8 summits and WTO meetings are similarly built to provide transnational security. In these cases temporary defensive fortifications are built around gatherings of elite politicians and world leaders from different nations. The policing of such protests involves sharing of strategies, training and labor across different nations, a method of policing that has arisen out of and in response to globalization (della Porta et al., 2006). Detention centers can also be read as part of immigration-security networks that justify the detainment of human beings inside prisons to protect nations from 'illegal' migrants and terrorists. The US Homeland Security's *Secure Border Initiative* called for 400 new Immigration Enforcement Agents and 100 new Deportation Officers and 2,000 new beds in detention facilities as part of their efforts to gain 'operational control of both the northern and southern borders within five years' (DHS.gov). Here again the purpose is not to hold entire populations of people, it is only a small fraction of those people deemed 'illegal' that could be imprisoned at any time.

Second, globalized fences are contracted through multinational companies. The most common of these contracts are with construction companies, telecommunications companies and increasingly infrastructural and organizational consultancies. Those companies designing and operating 'globalized fences' include the large Israeli firm Magal Security that operates in 70 countries securing borders, prisons, military bases and VIP residences. Another major player in fence security is Group 4 Securicor, notorious in the UK for losing prisoners during transit in the 1990s. After a rebranding in 2004, G4S has come to be at the forefront of prison and immigration detention center privatization in the UK (Corporate Watch, 2003). Group 4 is partnered to the US military, protects NATO buildings in Europe, operates 8 immigration facilities in The Netherlands and provides oil pipeline security in the Kazakhstan region – interestingly, oil pipelines are the next market that Magal, according to its company website, hopes to provide service for soon. Similarly, in the telecoms sector, major corporations involved in perimeter-security operations include AT&T, Verizon, Hewlett Packard (HP), IBM, Microsoft and Motorola. These companies have entered contracts in the US and abroad providing services ranging from biometric scanning to ID cards to radios for border patrol agents.

A third shared characteristic is that globalized fences are built with materials imported from different nations. Like many goods in the 'era of globalization,' individual parts are often produced and assembled in a variety of different countries. Materials such as concrete, steel and microchips, among others, are imported for the construction of perimeter-security-networks. For example, parts of the US-Mexico border fence constructed in 1994 were made from 'leftover' steel panels that had served as runways during the Vietnam War. More recently, in 2007 it was disclosed that steel from China was being used to build at least 10% of the new parts of the US-Mexico border fence. This caused uproar from the US Congressional Steel Caucus that made local, national and international news.

Finally, globalized fences integrate virtual and physical technologies. The development of digital and wireless technologies has shaped the design of new surveillance equipment from body heat sensors that allow patrollers and security officers to locate bodies in the dark to Unmanned Aerial Vehicles or UAVs that hover over the border

using advanced video and sensor technology to spot would-be crossers. These controversial ‘smart fence’ and ‘virtual fence’ technologies work in conjunction with human patrols, communications devices and physical barriers. For example, the fence constructed in India along the Line of Control consists of a 340 mile long fence electrified in some places as well as a variety of motion and thermal heat sensors. Much of this technology deployed in India is manufactured in Israel. These ‘smart’ technologies are also used in places to cut down on human labor or to replace physical barriers in low traffic zones and in zones where erecting a fence is not an option (due to land disputes, environmental protections, etc.).

While the stark contrasts and particularities of all fenced locations demand contextual analyses, my aim here is not to account for the biopolitics of distinct perimeters, borders or enclosures. Rather, I seek to highlight the significance of the fence as a particular kind of technological object that shapes and mediates interpersonal and political communication. My approach loosely follows methods for thinking about networks outlined in the work of Bruno Latour. I combine this with cultural materialist work on containers and scholarship on the affective dynamics of technologies as mediators of social life.

Fence theory

The maintenance (or semblance) of securing a fence requires ‘cooperation’ between a number of different people: government officials, lawyers, builders, police, soldiers, private security guards, etc. It also requires engagements between people and technologies. Many technology theorists have made the argument that ‘technology’ does not refer only to self-contained technical objects, but also to the social, economic and cultural systems which physically construct and give meaning to what we think of as ‘technologies.’³ One of the most influential of these is Actor-Network Theory. Science and Technology Studies scholars Bruno Latour and Michel Callon are generally credited with initially developing Actor-Network Theory in the early 1980s (Sismondo, 2009). Since then it has been taken up, critiqued and transformed by a number of theorists (Haraway, 1991; Law and Hassard, 1999; Latour, 2005). As it is concerned with relations between individuals, groups and objects, this approach is useful for analyses of ‘technology’ that address power and its potential transformation.

Actor-Network Theory provides a method for thinking about how interdependencies between people, groups, objects and other ‘networks’ emerge and function. It is particularly useful for thinking about how human and non-human agents are always enmeshed. Thierry Bardini offers this illustrative summary:

[Actor-Network Theory] describes the progressive constitution of a network in which both human and non-human actors assume identities according to prevailing strategies of interaction. Actors’ identities and qualities are defined during negotiations between representatives of human and non-human actants... The most important of these negotiations is “translation”, a multifaceted interaction in which actors (1) construct common definitions and meanings, (2) define

3 See for example Ruth Cowan (1985) and Judy Wajcman (1991).

representatives, and (3) co-opt each other in the pursuit of individual and collective objectives (Bardini, 1997: ft 3).

Employing this notion of 'translation', the process of joining together to secure a perimeter can be read as a series of negotiations in which human actors (police, soldiers, government officials) and non-human objects (wire mesh, fence posts, razor wire, guard towers, thermo-dynamic sensors, cctv cameras) enter into particular relations with each other. Each human actor might have different motivations for containing land and bodies (adhering to legal codes, maintaining a job or reputation, increasing the value of property), but through their construction of the tasks needed to achieve a common goal they negotiate a way to function as a whole 'security network'. Describing post 1990s shifts in US-Mexico border security, Meyers argues:

border control has also evolved from a low-tech, one-agency exercise... to a far more encompassing concept including multiple agencies, the extensive use of technology and a broad geographic focus which not only include the entire US border and coastline but also projects to transit states and countries of origin (Meyers, 2005: 2).

Again this high-tech, multinational approach is a key characteristic of perimeter-security in a globalized world.

While any fence must always be read in relation to its functions in a network, there are also particular qualities of the fence as a technology that call for closer inspection. First introducing the idea of a 'container technology', Lewis Mumford argued that the role of 'containers' was often overlooked because of scholars' focus on tools. He suggested that because containers were associated with the feminine, scholars disregarded their significance as technological objects (Mumford cited in Sofia, 2000). Zoe Sofia picks up Mumford's discussion of gender and container technologies. She argues that containers are thought of as passive and static, rather than as active objects. This, she says, has led to a lack of consideration of how containing – storing or holding – is shaped by, and shapes, human relations. Sofia aims to correct this 'phallic bias' by reformulating the act of containing. She draws from Donald Winnicott's work on space to argue that containers are not just empty vessels or objects that passively hold things. Rather, they are what we 'put stuff into, and thereby identify with' (Sofia, 2000: 185). Sofia's conception of containment borrows from Winnicott's 'intersubjectivist accounts' that view the 'holding and supply' of space 'as the result of maternal labours' which require 'care' (190-191).

Similarly, Jean-Pierre Warnier argues that key to the interpretation of containers as objects is an understanding of sensori-motorcity, or in other words, how these objects affect and are affected by senses and movement (Warnier, 2006: 191). Reviel Netz makes a related claim in his history of barbed wire, writing, '[by] cutting through the boundary of our skins, you can act to protect the boundaries of your property, your prison, your border' (Netz, 2004: 39). Oliver Razac also argues that barbed wire has an active relationship with bodies in excess of its role to contain and separate. This relationship, he writes, 'occurs at the subtlest of levels, that of people's awareness of suffering and their inclination to avoid it' (Razac, 2002: 89). In this way, the wire simultaneously de-humanizes and returns one to the body as a site for injury and suffering. In addition, the presence of the wire assumes the bodies' desire to cross over

the fence. These features of barbed wire express its material, symbolic and affective dimensions. The ways in which bodies act and react to the wire raise questions of embodiment at the fence as a site of political struggle. More than just a technology overloaded with cultural and political meanings, the fence is an active, networked object that shapes political practice and communication.

For the remainder of this paper I turn from this broad conceptualization of ‘globalized fences’ to a discussion of specific political actions that unfold against, and at the site of, such fences. I attempt to look from the point of view of the fence as a communicative location of political struggle. To do this I center my discussion around two key sets of protest practices that illuminate the distinctiveness of the fence as a technology in perimeter-security networks, namely, such actions that engage first, the fence as canvas and second, the fence as an information communication technology or ICT.

Surfaces – Fence as canvas

The surface of a fence can be full of holes, anti-climb slits, and rusted openings. Some are polished, others painted. They can be flat, smooth or textured sites, some covered in skinny wood slats diagonally laid to prevent bill postings. Yet one thing perimeter fences often share, particularly at sites of struggle, are brandished surfaces. They display graffiti, affixed objects, fragments of torn clothes, cut and bent wire – remnants of protest, of touch, of human and non-human presence.

In their recent work, Mark Halsey and Alison Young argue that there is an affective dimension of graffiti writing. Based on extensive interviews with writers, they argue that graffiti writing is ‘an *affective* process that *does things* to writers bodies’ (and the bodies of onlookers) as much as to the bodies of metal, concrete and plastic’ (Halsey and Young, 2006: 276-277, emphasis in original). Similarly, I consider graffiti writing and other practices that transform the fence into an apparatus for expression as affective engagements through which people forge connections with others and with their surroundings, often confronting or re-imagining conceptions of themselves as political subjects in relation to the spaces around them.

Dean MacCannell speaks of the social and communicative dimensions of the 25 foot high concrete portions of the Israeli ‘security fence’ arguing that the wall functions, ‘as a signboard bearing a message the wall builder or a graffiti artist wishes to communicate’ (MacCannell, 2005: 38-39). Ruchama Marton and Dalit Baum describe this as ‘opaque concrete’, arguing,

It is opaque in order to prevent the sight of misery and suffering on the other side [as this] might trigger compassion for those people, might develop identification with them. This must be avoided at all costs, because otherwise the question might arise: Who caused this suffering? (Marton and Baum, 2005: 216).

The answers to this question are often what is written and imaged on the surface of the Israeli wall. On this fence-as-canvas one finds accusations, calls for compassion, images of suffering and visions of a world that might be otherwise.

In 2005 the now famous British street artist known as Banksy, did a series of images on the Israeli wall. Both acclaimed and detested, his controversial graffiti evoked a range of emotional responses from those living at the wall, as well as the thousands of people who saw these images circulated in print and online. A number of Palestinians felt the artwork was unrealistic, engaging a visual rhetoric of hope that distracted attention from the brutal, everyday realities of the occupied territories. In December 2008, Checkpoint Watchers Machal C. and Tamar Fleishman discussed what had come of these paintings in Qalandiya:

The astonishing Pentimento displays on the Qalandiya wall exhibit a large range of insights that have been collected through out the years: One of the first graffitizes to have been painted on the wall over three years ago (November 2005), which presented a child holding a bucket of paint and drawing a crack in the wall as an escape channel, was criticized by the Palestinians as an effort to 'make the wall nicer to look at'. It has now been completely altered: the crack in the wall has been filled with bricks. There is no way out! Perhaps it is a symbol to end the naivety and optimism. (machsomwatch.org, 12 Dec 2008)

Graffiti is often recorded in Machsom Watch women's daily reports. More than a backdrop or description of scenery, words and images sprawled on the perimeter surfaces of the checkpoint become an active form. The cycle of graffiti production – creation, visibility and erasure – is mapped out across the course of watchers' reports. In this sense graffiti can be seen as a communicative event or living art. Returning to Hansley and Young this prompts questions about the affective dimension of graffiti writing – about what occurs between the surface of the wall and the bodies of onlookers (Hansley and Young, 2006: 276-277).

In May of 2009 Machsom watchers Rony I and Tamar F recorded the final days of the Longest Letter project, an initiative of the larger Dutch and Palestinian activist/NGO project *Send a Message* (sendamessage.nl). For this project, Muslim scholar and human rights activist Farid Esack was asked to write a letter addressing the current situation in Palestine. His letter compares human rights abuses in Palestine to apartheid South Africa:

We call upon the world to act now against the dispossession of the Palestinians. We must end the daily humiliation at checkpoints and the disgrace of an Apartheid Wall that cuts people off from their land, livelihood, and history. [<http://www.sendamessage.nl/the-longest-letter>]

This letter was then written onto the Israeli wall, running 2,625 meters. International sponsors were asked for €15.00 contributions, each of which sponsored 1.5 meters of writing. Rony and Tamar report:

Ever since the wall had been under constructions we had been documenting the graffiti paintings on it. About a month ago we had first come across the beginning of an inscription on the upper part of the wall at Ar-Ram. We returned to see what had become of it and tried to find out who was writing it... We learned that what had started out as a business opportunity for a group of Palestinians and Dutch, had materialized under an ideological principle and turned out to be an expression of the protest against the occupation... We felt it was important to document this project, as we know that the paintings on the wall don't usually remain untouched for very long. (machsomwatch.org, 10 May 2009)

Here the ephemeral life of graffiti – and particularly of graffiti in highly visible, politically potent locations – prompts Machsom watchers to create a visual and textual

record of this communication practice as event. The wall is explicitly seen as an object that actively holds and communicates information, or to return to Sofia's term, it can be read as a container technology that can unfold memories (Sofia, 2000). In her study of lesbian archives and lesbian public cultures, Ann Cvetkovich argues that memories of trauma are 'embedded not just in narratives but in material artifacts' (Cvetkovich, 2003: 7). Objects, such as photographs, invested with emotional and sentimental value, can be as much a document of trauma as a policy report or a personal memoir. While not the kind of archive Cvetkovich examines, I would suggest that, through people's actions, the fence becomes another sort of container: an ephemeral archive, as well as an archive of ephemera. The open mesh surface of a fence provides an ideal surface onto which one can affix objects. As they did so the fence becomes a collective documentation. In the place of detailed social statistics or scientific studies, it offers objects that hold people's stories. It can become, in Ann Snitow's words, 'an intense visual record' (Snitow, 1985: 45).

Speaking of pottery as material culture, Jean-Pierre Warnier writes that surfaces 'may be coated or receive a gloss or some other treatment to protect it or adorn it as well as to enhance the emotional dimension of its sensori-motor manipulations' (Warnier, 2006: 193). At the site of struggle, the surface of the fence-as-canvas comes to tell a unique story. Each fence has a style, an identifiable aesthetic. In Palestine: splatterings of paint in red, green, black and blue; scrawls of what is sometimes impossible to say out loud in public, testified here in Arabic, Hebrew, English, Spanish... These walls can talk.

At the same time, work must be done to get them talking, to uncover the stories of their past surfaces. Over time the fence-as-canvas erodes and transforms, becomes buried in other meanings. Objects are taken off and torn down from fences. Wire is removed and remolded. Entire concrete slabs and posts are even relocated. Palestinian artist and activist Suleiman Mansour tells interviewer Aaron Lakoff about a piece he was painting on the wall:

I started this type of painting, but I didn't finish it. You know they were putting the wall, they used to put pieces and then remove it again, so I started working on this piece which represents the hands of Adam and God as Michelangelo did it. But of course I separated the hands, I made a big space between the two hands. But then they took the pieces and I couldn't finish the painting (Lakoff, n.d.). Mansour explains that most Palestinian art is directed towards the situation here, and the occupation and the wall and the checkpoints, and everything that makes people angry. Of course the art brings this out. We never had a Palestinian art academy because during the Occupation it was forbidden for Palestinians to make two academic institutions... So you can see how they think, you know, the land is not yours, and you shouldn't express whatever happens to you. (Lakoff, n.d.)

Archaeologist Yvonne Marshall suggests that it is the struggles of a society and the archaeologies of its resistance that form 'an integral part of the processes which create, constitute and change apparatuses of societal control' (Marshall, n.d.: 2). However, it is not enough to construct or mark resistance as a monument or to preserve slabs of walls and wires in a museum under a glass case. We need new ways to excavate and archive resistance, ways that do not erase their sense of place, of context, of acts of transfer and circulation and destruction.

Openings – Fences as information communication technologies

Chain link, mesh and taut wire fences are often used when it is deemed necessary for security patrollers to be able to see or pass objects through an enclosure. Additionally, fences made of mesh wire are far less expensive to build both in terms of materials and labor than solid concrete or steel walls. For example, whereas portions of the Israeli ‘security fence’ in densely populated urban areas are made of concrete, the majority of the 500 kilometers long serpentine structure is full of openings. Marton and Baum argue:

The Zionist Israeli Collective does not want to see the Palestinians, but it finds it necessary to oversee them, to watch them with nonhuman sight, through a gun sight. ‘It is easier to shoot through a fence than it is through a wall’, remarked one Israeli activist in the Mas’ha Peace Camp. (Marton and Baum, 2005: 216)

The openings in fences allow for violence and surveillance. They are where negotiations are made, where empty chatter fills silences and frustrations play out. They are the place of exception, where verbal and physical abuse becomes the norm (Agamben, 1998).

At the fence as a site of struggle communication occurs between many different groups of people: guards and prisoners, soldiers and civilians, refugees and citizens. In the final section of this paper I consider openings in fences as the place of control *and* communication. I am interested in how fences mediate interactions at the site of violence, functioning as a vessel of communication that shapes and is shaped by the act of speaking. Like other technologies that facilitate the travel of information, fences become things people talk through, yet are never considered or included in discussions of ICTs. The definition of an Information Communication Technology used by the World Bank, reads:

Consists of the hardware, software, networks, and media for the collection, storage, processing, transmission and presentation of information (voice, data, text, images), as well as related services. [go.worldbank.org]

My provocation here to think of the fence as an information communication technology is not necessarily meant to redress this or other definitions of an ICT. Rather, I want to draw attention to the fence as a technological device that comes to mediate communication and information sharing between people. While it may at first seem merely metaphorical to describe the fence as an ICT, consider that throughout the early 1900s in rural America people hooked up telephones to lines of barbed wire to be able to talk with neighbors without having to pay network service fees. Alan Krell writes, ‘Instead of the more costly procedure of erecting poles and wires, many simply hooked lines onto existing pasture fences’ (Krell, 2002: 89). In what follows I look at two examples of fence-based struggles, the 2002 Woomera protests and the 2008 closure of Friendship Park. I focus on the communicative functions of fences in each of these events.

In 2002 nearly 1000 migrant rights campaigners gathered outside the Woomera detention centre, a detainee holding prison in a remote part of South Australia, well known for numerous human rights abuses during its operation from 1999-2003. At the 2002 protest the fence surrounding the Woomera complex was torn down by both those inside and outside, leading to the escape of over 40 detainees. While most escapees were 'hunted' down (in the language mainstream media including BBC news uses) and later deported, this event lives on in the collective memory of detainees, migrants' rights campaigners and immigration authorities.

A description of Woomera offered by Luther Blisset⁴ reads, 'The Woomera detention centre is all dust, tin sheds, riot cops and razor wire, but it still looks like an armed enclave, a roman camp' (Blisset, n.d.). Blisset's scene shows the interlinking of people and technology in perimeter security networks, as well as the underlying features that contemporary fence structures share with our understanding of historical fortifications and war zones. In testimonial accounts gathered under the title, 'Remembering Woomera', hosted on the website antipopper.com, protest participants recall the days of action that occurred at the perimeter of the detention centre. One solidarity participant recounts:

I suppose a bunch of protesters, advancing resolutely to shake hands and speak with asylum seekers through the fence can be *made* to appear violent when a bunch of cops are trying to disperse them with riot gear and horses. When a horse came out of nowhere, pushing me aside, and the mounted cop lightly kicked me in the head, smashing my glasses, I said, 'What are you doing? I'm only trying to say hello!'

Another protester at Woomera remembers this scene:

A man with whom I shook hands [through the fence] had gotten his head caught in the bales of razorwire that were on either side of the double fence. The razors were cutting through his ear. Another had been cut across the chest, and there was blood everywhere ('Remembering Woomera').

In both of these recollections the fence is described as vessel through which people communicate. The solidarity demonstrators outside are able to talk to, at times touch, the detainees on the inside of the fence. The fence is what one reaches through to express sympathy, desperation, longing, panic – and perhaps most of all – a sense of presence.

Friendship Park provides another more recent example of how fences perform as information communication technologies. Recognized since late 1800s as a gathering place for families and communities separated by the US-Mexico border, Friendship Park is a place of fence-mediated communication. Also considered sacred ground for Native Americans, the park is embedded with political and spiritual affections. For years this fence at Friendship Park served as a gathering place for families and friends separated by the border. A place romanticized by journalists, where 'lovers clasp fingers

4 Luther Blisset is a collective pseudonym first used in Italy in the early 1990s and now primarily used in Australia by artists and social activists. Blisset was a well known Australian footballer that played for A.C. Milan.

through the mesh' (NPR 'Fence Supplants Friendship') and people share 'tamales and news through small gaps in the tattered chain-link' (Archibold, 2008).

In early 2009 the US government announced the closure of the park to make room for 'triple fence' border wall as part of the broader secure border initiative. Signs were affixed to the temporary fencing demarcating the area listing new rules, among them: 'The exchange of items through, over or under the fence is prohibited; Physical contact with individuals in Mexico is not permitted'. The taller and thicker border fence now prohibits direct conversation and human contact, though people still gather, shouting across the gaps. The Border Meetup Group, a community organization that has gathered people together from either side of the wall over the past four years to hold language exchanges and readings. Now they use amplification technologies to transmit participants' voices. Families and friends that continue to gather at the park sometimes talk over cell phones and walkie-talkies while catching glimpses of each other through gaps in the fence (voices of sandiego.org).

I want to think about interactions through these openings as communication practices that are mediated by fences to be able to examine the fence in relation to other ICTs. As the field of communication studies currently stands, ICTs remain almost exclusively the domain of development policy and research. They are generally heralded as the good containers, the tools of empowerment, the media through which people and communities can facilitate their belonging. A telling example of this public relations rhetoric can be found in the recent European Commission's pamphlet 'On target! Impacts of European ICT Research', available online and distributed in colorful glossy print by this EU's publication office (EU, 'On Target!'). Two declarations of success on the front page of the brochure read:

- Do you know how the billions of Euros spent on ICT research and innovation help society tackle major challenges in health, learning, security, energy, or the environment?
- Do you know how knowledge sharing, partnerships and networks contribute to ultrafast internet, swallowable cameras for surgery, or emotional robots caring for the elderly?

Such pre-codings of ICTs as benevolent benefactors renders invisible, or at best marginal, all those other objects, devices, apparatus and platforms that mediate communication. It obscures the prevalence and significance of those fences invoked in this paper, as well as all those more discrete fences, barriers, gates, barred up and bullet-proof glassed windows that increasingly mediate face-to-face communication in much of the modernized world. To exclude these technologies from our definitions of ICTs is to act as if they are in fact exceptions, rather than guiding principles, architectures and artifacts of our time (Agamben, 1998).

Moreover, in the age of 'smart fences' that integrate so-called virtual and physical technologies, it is impossible to bracket off questions about how the very same developments that give us high speed internet, miniature robots and elderly care are those that bring us advancements in militarized technologies used to maim, kill and destroy humans, animals, environments and infrastructures (Dyer-Witford, 1999).

The development of digital and wireless technologies has shaped the design of new surveillance equipment from body heat sensors that allow patrollers and security officers to locate bodies in the dark to Unmanned Aerial Vehicles or UAVs that hover over the border using advanced video and sensor technology to spot would-be crossers. These controversial ‘smart fence’ and ‘virtual fence’ technologies work in conjunction with human patrols, communications devices and physical barriers. For example, the fence constructed in India along the Line of Control consists of a 340 mile long fence electrified in some places, as well as a variety of motion and thermal heat sensors. Much of this technology deployed in India is manufactured in Israel. These ‘smart’ technologies are also used in places to cut down on human labor or to replace physical barriers in low traffic zones and in zones where erecting a fence is not an option (due to land disputes, environmental protections, etc.).⁵

In addition, as global producers of ICTs are often manufacturing goods for a range of sectors, there is a particular need to draw attention to the fact that the very companies providing the technology and infrastructure for laptops, mobile phones and wireless internet are also making and supplying technologies for security regimes. In a telling recent example, Huneed Technologies, a company that has developed a laptop ‘designed to withstand severe environmental conditions such as heavy rain, high & low temperature and high humidity’, also recently donated \$7million worth of fiber optic fencing to the Minutemen who are currently constructing segments of the US-Mexico border wall on a volunteer basis, perhaps hoping the US government would take note of the efficiency of their product.

Conclusion

In this paper I offer a conceptualization of ‘globalized fences’ that highlight the material qualities of fences and their roles in perimeter-security networks in order to better understand the relationship between the different kinds of fences that continue to spring up and expand both within and between nations. In addition, I introduced two types of resistant actions that engage the fence as a site of struggle: the fence as canvas and the fence as ICT. Here I showed how fences at sites of struggle become platforms for and through which people communicate. I argued that considering fences – and related security technologies – as ICTs offers a clearer account of both the positive and negative ways that new technologies are utilized.

These documentations are only a beginning. There are many more fences and many more forms of resistance to them, including cutting, climbing, trespassing, tunneling and remodeling. As I gather archival research and collect anecdotes along this sometimes seemingly endless trail of fences, I am guided by Bruno Latour’s somewhat playful proposal for how to study objects. He writes, ‘Specific tricks have to be invented to make them talk, that is, to offer descriptions of themselves, to produce

5 In March 2010 the US froze funds allocated to constructing parts of the planned ‘virtual fence’ along the border. Part of the broader SBInet project, this funding was cut off due to missed target deadlines and the overuse of funds. The money is planned to be reallocated for alternative perimeter security projects.

scripts of what they are making others – humans or non-humans – do’ (Latour, 2005: 79). Perhaps, put simply, the goal of my project is this. It is an effort to get these fences talking, to make people’s stories of struggle echo off the concrete and razor wire.

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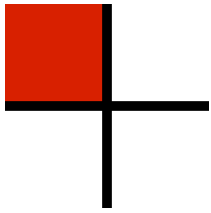
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Insurgent posthumanism*

Dimitris Papadopoulos

abstract

Can we imagine a posthumanism in close connection to alternative political projects and new global social movements? What would it mean to organise *radical left posthumanism*? Posthumanism could offer an alternative perspective to dominant left political fantasies focused on conquering institutional and state power. But coupling radical left politics and posthumanism challenges many of mainstream posthumanism's assumptions. An insurgent posthumanism would contribute to the everyday making of alternative ontologies: the exit of people into a common material world (not just a common humanity); the embodiment – literally – of radical left politics; finally the exodus to a materialist, non-anthropocentric view of history. These engagements are driven by the question of justice as a material, processual and practical issue before its regulation through political representation. Alter-ontology: justice engrained into cells, muscles, limbs, space, things, plants and animals. Justice is before the event of contemporary left politics; it is about moulding alternative forms of life.

1. Radical posthumanism?

Posthumanism challenges the dichotomy between humans and nonhuman others and the analysis of social processes based solely on the grounds of human action and intentionality.¹ But is it possible to reduce the textured relations between humans to the universalising category 'human'? How is it, after so many decades of work trying to question humanist universalisations, are we now confronted with probably the worst of them all: all humans as one, as if there were no divisions and alliances, divergences and

* Special thanks go to Hywel Bishop and Maria Puig de la Bellacasa for their critical comments. I would also like to thank Antonis Balasopoulos, Joanna Latimer, Simon Lilley and Stephen Shukaitis and the members of the Culture, Imagination and Practice Research Group at the School of Social Sciences, Cardiff University for their valuable suggestions. Crucial for developing the ideas presented here was the presentation of earlier versions of this paper in the conference *Life, Practice, Multiplicity*, Institute for European Ethnology, Humboldt University, Berlin; the conference *Intellectuals and the State*, Department of English Studies, University of Cyprus; and the conference *State of Things*, Centre for Philosophy and Political Economy, University of Leicester. This paper wouldn't be possible without the collaboration with Niamh Stephenson and Vassilis Tsianos and our common work in earlier publications.

1 This essay will focus solely on posthumanism as a social-semiotic practice that challenges the humanist understanding and split of society and nature. Post-human positions and trans-humanism (the discourse of overcoming the human condition) touch only marginally (or not at all) upon serious debates and critiques of humanism and therefore won't be considered here.

similarities, differences and conflicts between humans? And the problem seems even more acute when we consider the other pole: how is it possible to homogenise nonhumans to the extent of creating an otherness so vast and uniform that even the most dedicated orientalists could not have conjured such an image in their wildest dreams? In fact, the universalism and reductionism of the category 'nonhuman' may be even more dubious than traditional humanist categorisations because it can so easily be presented as a progressive move of including the hitherto expunged nonhuman others into human business.

Can we develop an alternative take on posthumanism? Can we think of alternative forms of organisation that challenge both humanism and the new universalisms of mainstream posthumanism?² This essay attempts to rethink possibilities for a posthumanism that would be in close connection with the organisational forms of radical political projects and new global social movements. What would it mean to organise *radical left posthumanism*? But since the left is as clear as the waters of Ganges we will need to question many of its fixations and certainties in order to be able to detect and strengthen non-humanist and posthumanist energies in radical left activism.

It is true that left politics have largely ignored the complexity and unpredictability of the entanglement between a deeply divided society and that of a deeply divided nonhuman world. The principle avenue for social transformation, at least in the main conceptualisations of the political left³, passes through seizing the centres of social and political power. The dominant motivation for left politics after the revolutions of 1848 (and definitely since 1871) has been how to conquer institutional power and the state. Within this matrix of radical left thinking the posthumanist moment becomes invalidated, subsumed to a strategy focused solely on social power. But here I want to argue that a post-humanist gesture can be found at the heart of processes of left political mobilisations that create transformative institutions and alternatives. This was the case even when such moves were distorted at the end, neutralised or finally appropriated into a form of left politics solely concerned with institutional representation and state power. What such an appropriation conceals is that a significant part of the everyday realities put to work through radical left struggles have always had a strong posthumanist character through their concentration on remaking the mundane material conditions of existence beyond and outside an immediate opposition to the state. In what follows I will try to excavate this posthumanist gesture from the main narratives of radical left political struggles along the following three fault lines: the first is about the exit from an alienated and highly regulated relation to the material, biological and technological realms through the making of a self-organised common world – a move from enclosed and separated worlds governed by labour to the *making of ecological commons*. A second posthumanist move is one that attacks the practice of politics as a matter of ideas

2 These questions are inspired by critical organisational studies, e.g. De Cock, Fleming and Rehn (2007); Parker (2002); Parker, Fournier and Reedy (2007).

3 I am mainly referring here to the left tradition emerging out of the working class movement, including socialist, communist and autonomist currents. The anarchist left is of course very different in terms of their strategy regarding institutional power but has (as with other leftist thought) been equally plagued by the humanistic ideas I will be discussing in this paper.

and institutions and rehabilitates politics as an embodied and everyday practice – an exit from the representational mind to the *embodiment of politics*. Finally, the third, involves the decentring of the human subject as the main actor of history making. History is a human affair but it is not made (only) by certain groups of humans – a move towards a *post-anthropocentric history*.

2. The state and the appropriation of the posthumanist commons

A first erasure of the posthumanist gesture in the left can be located in the political strategies that evolved after 1871. ‘The Socialist Party is the anti-State, not a party.’ This is not Lenin. It is Gramsci, in 1918 (quoted in Pozzolini, 1970: 76).⁴ There is a fundamental assumption behind the politics of the left up to World War II: the state is a totalising form of power that the socialist party, if it wants to be successful in its political struggle, needs to destroy. A classless society is possible only through the destruction of the state. The mantra of Marx and Engels’ refutation of Hegel’s idealism of the state is of course well known. But the departure from Hegel was an unfinished story. By keeping the state in the centre of society, even if only as a materialist immanent entity, Marxists opened the possibility for modelling any struggle for the emancipation of labour as passing through it.⁵ Every other possibility for radical social transformation disappears from the horizon of radical political action. The name of this path is revolution – which seizes the state in order to organise the move to a stateless society.

But the effects of the revolution that Marx and 40 years later Lenin had envisioned never happened. The non-state stage never came, instead a new incarnation of the state emerged, state socialism. The fact is that radical left revolutions, at least historically, have strengthened the state as totality instead of ending it. But how is this possible?

4 Gramsci (1918): ‘The Socialist Party is fundamentally different from other political parties. It is not even a party in the organic and classical sense of the word. Political parties are spokesmen for social groups, not for a class. It is only in their entirety that they represent a class which has its executive organ in the State. The Socialist Party is the anti-State, not a party. Bourgeois groups want to change the state marginally through their parties, merely by giving it one particular direction rather than another. The Socialist Party wants to remould the State not to improve it. It wants to change all of its values. It wants to re-organise it, founding it upon social forces and ethical principles totally different from the present ones.’ (Gramsci quoted in Pozzolini, 1970: 76).

5 The revolutionary dictatorship of the proletariat was Marx’s answer to the political dilemmas between anarcho-syndicalism on the one hand and reformist democratic politics on the other. These dilemmas were widespread already since 1848. After the defeat of the Paris Commune the need was to overcome a fixation with spontaneous revolt and to form a new kind of organisation, the Marxist Parties, with the Social Democratic Party of Germany as one of the first of them. ‘The question then arises: What transformation will the state undergo in communist society? In other words, what social functions will remain in existence that are analogous to present state functions? This question can only be answered scientifically, and one does not get a flea-hop nearer to the problem by a thousand-fold combination of the word ‘people’ with the word ‘state’. Between capitalist and communist society there lies the period of the revolutionary transformation of the one into the other. Corresponding to this is also a political transition period in which the state can be nothing but *the revolutionary dictatorship of the proletariat*’ (Marx, 1875, Chapter IV, emphasis in original).

How did the 'science of revolution' get things so wrong? A change of perspective could help to illuminate this paradox: rather than look at the state in terms of the control it engenders we need instead to examine it from the perspective of struggles. In other words, instead of focusing on how the state governs society, we should explore the particular social struggles that the state in the age of revolutions is responding to.

If we investigate the state from the perspective of struggles we find something more important in its resilience than its rough persistence against the revolutions spreading across the globe from 1848 up to the 1950s with the Chinese and the Cuban revolutions. It is its capacity to embody and to guarantee a form of humanist freedom which was equally central to both the formation of the working classes as well as of capital: the freedom to sell one's labour power. The supposed ideological power of the state is considered to be multifarious but at its very core what the state does is to appear as uniting the freedom of labour and the freedom of capital under the banner of humanism. In fact what the state does is to appropriate the freedom of the workers and to make it productive by guaranteeing that the workers can be free and autonomous sellers in the market. This particular freedom and the market system that it brings with it is the bedrock of a humanist understanding of society and of people's existence. In other words, the humanist vision of the state identifies this freedom to being a fully human subject. The state is the main guarantor of humanism which appropriates people's freedom through the labour market. And left politics usually attack the state not because of this humanist appropriation of the workers' freedom but because it is not humanist enough.

But what this humanism in fact hides is that it is a response to a long history of non-humanist struggles that were equally but differently appropriated by the state as well as by formalised left politics. The freedom to choose and to change your employer is not a fake freedom or an ideological liberty, as classical working class Marxism suggests, but a historical compromise designed to integrate the released, disorganised and wandering workforce emerging from the 15th century onwards into a new regime of productivity. In fact what we have here is a mass of workers exiting indentured, forced or slave work and reinvesting their capacities in a new entanglement with materiality. The Marx of the *1844 Manuscripts* and the *German Ideology* (unlike the later Marx of the *Gotha Program*) captures some of these tight interdependences between people's action and the creativity of the natural world and investigates how alienation from the capacity for a self-organised development of people is imposed on them by separating people into classes (as well as genders and races) and alienating them from nature. This is the reason why Marx talks of 'species being', a term, which despite its essentialist connotations, is as close as one can get to a radical understanding of a form of self-instituted collective emancipation in which cooperation and interaction among people and between them and the environment is crucial (Dyer-Witford, 2006).

The singularities that composed the escaping, wandering mob were very far from the humanist individual emerging at the same moment across Europe and much closer to a non-humanist pleb. It is exactly these despised and dangerous non-humanist collectivities that defined the core of radical struggles for emancipation (even long before they could be called left). This non-humanist gesture is literally a displacement of the previous regime of feudal and indentured labour into the world of matter and of

multiple collectives between other people and nature's forces. This exit from the feudal labour regime into a creative relation with matter gives rise to new shared common worlds. It is only the humanist ideal of 'Man mastering nature' that destroyed these diverse ways of relating to others and to nature – as Merchant (1990) and Starhawk (1982) remind us. So, many of the scattered, disorganised, ephemeral, insurgent movements of people exiting feudal labour in so many different locales and geographies, continents and seas were *not* to enter into the capitalist humanist regime of the labour market but to escape into a journey that allowed them to create common worlds. Silvia Federici's *Caliban and the witch* (2004), Yann Moulier Boutang's *De l'esclavage au salariat* (1998), Peter Linebaugh and Marcus Rediker's *The many-headed hydra* (2000), Marcus Rediker's *Between the devil and the deep blue sea* (1987), A.L. Beier's *Masterless men* (1985), Tom Brass and Marcel van der Linden's *Free and unfree labour* (1997), Robert Steinfeld's *Coercion, contract, and free labor in the nineteenth century* (2001), all – among many others of course – describe various incidents and occasions, dispersed in historical time and geography, in which new modalities of labour and new self-organised relations between escaping people and land, plants and animals gave birth to forms of exit from oppression and to the making of different social-material relations of liberty (for a further discussion of these texts see Papadopoulos, Stephenson and Tsianos, 2008, Section II).⁶ These are moments of making a common non-proprietary world, the making of the commons, 'commoning' as Linebaugh (2008) calls it, the continuation of life through 'commoning' the immediate sociality and materiality of everyday existence. This is a truly non-humanist flight into a world where the primary condition of existence is the immersion into the worlds you inhabit and share with other humans and non-humans.⁷ This is not only the social commons, it is a worldly commons, an ecological commons. And then this world is collective, shared by definition, a culture mixed with nature, actual *naturecultures*, a material order that facilitates the sharing of different commons. It is only after that the question of social organisation is asked. And this question is about labour, how should work be organised in order to maintain the commons?

Thus, just before the historical moment of the emergence of the modern left and of humanism we could say that the first *radical left non-humanist moment* is the moment of making justice and achieving freedom through a flight to the self-organised world of the commons, the worldly commons, the ecological commons – an ecological world which of course existed long before this flight from the feudal order. It is this form of

6 My position here is directly connected to Nick Dyer-Witheford's understanding of the commons (<http://commonism.wordpress.com/>). It also corresponds to Stefano Harney's approach to the history of living labour and its capitalist capture (Harney, 2006; 2008). See also the work of Massimo de Angelis (2007).

7 Peter Linebaugh: 'So common rights differ from human rights. First, common rights are embedded in a particular ecology with its local husbandry. For commoners, the expression "law of the land" from chapter 39 [of the Magna Carta] does not refer to the will of the sovereign. Commoners think first not of title deeds, but of human deeds: how will this land be tilled? Does it require manuring? What grows there? They begin to explore. You might call it a natural attitude. Second, commoning is embedded in a labor process; it inheres in a particular praxis of field, upland, forest, marsh, coast. Common rights are entered into by labor. Third, commoning is collective. Fourth, being independent of the state, commoning is independent also of the temporality of the law and state. Magna Carta does not list rights, it grants perpetuities. It goes deep into human history' (Linebaugh, 2008: 44-45).

escaping into a non-humanist nature-cultural and socio-material regime that needed to be recaptured and was in fact recaptured into a new order of organisation that became formed into capitalist social relations. The key function of wage labour is not first and foremost to oppress or control people's productive capacities but to manage worker's surplus of non-humanist freedom. Wage labour was the device which made capitalist social organisation possible and it was a device which was aiming at controlling the liberties' proliferation in the eco-commons. The long process of the historical formation of capitalist relations of production relied on the long process of the transformation of commoning to wage labour. 'Labour as dressage': discipline, taming, performance lies in the heart of the process of transforming work through protestant humanism to the centre of the markets and busy-ness (for a critical analysis see the inspiring work of Carter and Jackson, 2005; Jackson and Carter, 1998). Thus, capitalist social relations transform the worker's non-humanist liberty of 'commoning', of making eco-commons, into a fixed and stable labour market that operates through enclosing labour into individual performance, efficiency, precision and the ethics of the humanist subject.

But this description of the rise and fall of non-humanist struggles is not yet the whole story for what we understand left politics today. Yann Moulier Boutang in his book *De l'esclavage au salariat* (1998) highlights that there is absolutely no historical necessity to move to the capitalist form of wage relations: patronage, forced labour, different forms of serfdom, indenture, plantation slavery all existed up to the 19th and 20th century and even until today (for an extended discussion of these examples see Papadopoulos et al., 2008). If one thinks from the perspective of the capitalist state, there is absolutely no necessity to change the state in its feudal form. The necessity for transformation happened because of the struggles of the working classes and most importantly the slaves⁸ escaping into new forms of non-humanist liberty: this form of liberty is a move to a tighter, more intimate relation between human action and material force. The move from forced or bonded labour to *free* practice is a step in achieving more freedom to enter into more immediate entanglements with material processes. It is people reclaiming their relation to the material world – it is this commoning of the world, not only the social world, but the world as such – that becomes the revolutionary drive of the transformation to capitalism. Struggles come before the formation of power. However elusive and neglected they are, it is these non-humanist struggles that drive history-making on the ground. And they drive it by creating new possibilities that cannot be ignored. Capitalist power reforms as a response to these non-humanist struggles by slowly moving to a form of production that appropriates most of these liberties but preserving a small part of them: this small part is that work can no longer be regulated through non-economic violence but only by contractual means. That means that labour becomes free labour, i.e. the freedom to choose your employer. Thus,

8 'Haiti, the island that produced half the sugar in the world, initiated a decolonization that lasted two centuries, got rid of the whites, and abolished the slave economy. Between 1791 and 1796, it was done: Toussaint L'Ouverture defeated Napoleon Bonaparte. The plantation economy was undoubtedly efficient; the problem was that it was unstable. If capitalism abandoned slavery as a strategic perspective, it is because its own existence was menaced by the instability of the market that it put into place: if there had not been the Jamaican insurrection of 1833, the English Parliament would never have abolished slavery. The struggles of the slaves in the two centuries of modern slavery are worth ten times more than the struggles of the working class: they were more violent, more virulent, more destabilizing than the workers movement' (Moulier Boutang, 2001: 228-229).

‘striving for freedom’ is the fundamental element of the capitalist labour relation if it is to succeed in appropriating and canalising the non-humanist liberties of the eco-commons. The freedom to choose your employer becomes so important for capitalist labour that it simultaneously becomes the main focus of control and coercion.

It is exactly this kind of control of workers’ and slaves’ exit that the modern wage labour embodies and engenders.⁹ I read this as the moment of the formation of control against the unfolding of the slaves’ and workers’ cultures of freedom established on a non-humanist relation to their own bodies, tools, the environment, physical space, animals and plants. The capitalist state is neither a superstructure nor ideology nor a strict tool of domination. It is a form of everyday control which simultaneously guarantees the freedom of employees to sell their labour power but translates this freedom into capitalist profit. This schizophrenic mix of freedom and exploitation are the two most crucial ingredients for the sentiment which is still dominating our lives in Global North-Atlantic societies. The capitalist state is an organic mould of society and materiality, it makes exploitation out of freedom without falling as far back as to cancel freedom itself completely. And it does not even try to mask it. It just does that. It is not mere ideology or illusion that there exists a shared interest in the way the state organises society. Out of relative non-humanist freedom, the capitalist state forges a relative humanist unfreedom.

Any attempt to overcome this situation by eliminating this freedom, however relative and limited it might be, is doomed to fail. And it is doomed to fail not because it will be opposed by capital but because in the long run it will be not supported by labour. This is what happened with most of the revolutions since 1871. The progress which was achieved after seizing power, soon transformed into a form of control that attempted to diminish even this minimal part of workers’ freedom to sell their power which even capital relations try to preserve. ‘The so-called socialist societies’ became ‘backward capitalist societies’ (Negri, 2005: 179). The fidelity to the coming society evaporated into seizing state power in order to impose conditions for increasing the freedom of labour and for eliminating the freedom of capital. But what happened in reality was that by making the totality of the state both the main target and simultaneously the path for social transformation and radical change, the revolutions ended up reinforcing the logic of the state rather than supporting a radical non-humanist extension of the workers’ freedom. Instead of betraying the state and its order, the revolutions, one after the other, ended up betraying the workers. And while this was happening, the capitalist state kept reorganising itself in response to the threat of the worker’s cultures of freedom. As Wallerstein says, ‘the revolutions never worked the way their proponents hoped or the way their opponents feared’ (Wallerstein, 1998: 13).

9 ‘As the state arose from the need to keep class antagonisms in check, but also arose in the thick of the fight between the classes, it is normally the state of the most powerful, economically ruling class, which by its means becomes also the politically ruling class, and so acquires new means of holding down and exploiting the oppressed class. The ancient state was, above all, the state of the slave-owners for holding down the slaves, just as the feudal state was the organ of the nobility for holding down the peasant serfs and bondsmen, and the modern representative state is the instrument for exploiting wage-labor by capital’ (Engels, 1886, Chapter IX).

3. The event and the appropriation of posthumanist embodiment

What the revolutions could not establish was achieved in a series of uprisings and social movements erupting across the globe since the 1960s (Connery, 2005). Common to these is the betrayal of a relative stable form of regulation manifesting after World War II. In a moment when the ‘withering away of the state’ seems almost impossible, new social movements, social mobilisations and the cultural uprisings after the 1960s challenged the conditions of the organisation of the state in a deep and radical way.

Only ten to fifteen years after referring to the socialist party as the ‘anti-state’, Gramsci challenged the fidelity to the strategy which focused on the state as the main target to change existing social relations. Such a strategy would be just a defensive and responsive action to existing and congealed relations of power, something which would be a disastrous guide for achieving the hegemony that could facilitate radical social transformation. Gramsci’s work on seeing the state as a balance of forces which is not only sustained through economic power and class antagonism but also through cultural relations was an important example of a conceptualisation of the state that conceives it as an amalgam of singularities and subjectivities. This corresponds to a new moment of non-humanist struggles – which can now be called *posthumanist* as they come long after the manifestation of humanism: embodied subjectivities become the site for the making of a politics as a means of radically challenging an existing balance of power.

The centrality of embodied subjectivity for politics manifests in the centrality that the human body achieves as a site of control in humanist culture: co-option and training, subjugation and usefulness are inseparable for the operation of the modern political rationalities of state government. For Foucault (2004a; 2004b), in his later lectures, there is no external relation between the modern state and the subject, government is what connects practices of the body and practices of domination. The capitalist state is understood as a totalising form of power only because it individualises its members and is increasingly fragmented. Following but also criticising Foucault, Nicos Poulantzas (1978) highlights how the modern state evolves as a permanent but unstable balance of compromises between different social subjectivities and classes. The state does not have the *resolution* of social conflicts – by absorbing and terminating them – as its ultimate aim. Rather, it attempts to regulate and ultimately control conflicts, by developing multiple ways to *include* subaltern social subjectivities and classes and therefore to claim itself as a representing body. This form of government emerges after the 1960s. And it emerges as a response to the new social movements’ mobilisations and uprisings which forced the capitalist state to reorganise itself. What the so called new social movements in fact did is to betray both, the total state of the previous period as well as the orthodox left revolutionary practices (described in the previous section) which were trying to respond to this total state.

The struggles of the new social movements were not solely organised around and against the state and its institutions. Again, the opposite is the case: subversion is performed by social actors who negotiate their embeddedness in state power under the signature of a posthumanist escape, not under the imperative of inclusion. They escape into the reorganisation of embodied ways of existing and relating, mutating the

meanings of what social and human relationality means, they escape into novel embodied material practices which put their subjectivities at the forefront of doing politics (feminist movements, environmental movements, anti-racist movements, cultural mobilisations are some of the most important in this regard). The rise of neoliberalism is how the state attempted to capture these escaping and subversive subjectivities. Luhmann's (1995) vision of 'non-society' is the most brilliant and apt description of the workings and intricate relationalities dwelling in the social worlds emerging in these conditions.¹⁰ The social and material space as fragmented, discontinuous, undecided, interconnected, relational: as network. The imagination of neoliberalism and of transnational sovereignty is dominated by one banal picture: nodes and lines, no beginning or end. You can constantly withdraw or add new nodes. Some of them are more powerful than others and manage a certain region of the network. A thinker like Bruno Latour appears (2005) as the prototypical intellectual of the new networked and plural 'assembling' state through his concerned crusade against the structuralist totalitarian state of the Marxist orthodoxy.

The crucial moment here is that the posthumanist exodus to an embodied form of politics was gradually appropriated into the networked neoliberal function of society. And with it much of the left retreated to a new way of understanding social transformation: it is no longer the revolution against the state that dominates the left's imagination but a fidelity to the event to come which will overcome the new plural networked capitalism. Alain Badiou seems to express this kind of thought in an exemplary manner. In his magnificent book *Metapolitics* he says that every real politics can be first and foremost evaluated on what it says about the state. A central idea to Badiou's ontology is 'that what the State strives to foreclose through its power of counting is the void of the situation, while the event always reveals it' (Badiou, 2005: 119).¹¹ Here again freedom is derived from the situation of control, more specifically from its absent centre, the void which is a structuring constituted power but cannot be represented within it. The very possibility of the event, as conceived by Badiou, relies on that: the fidelity to something which eludes the logic of the situation but as such comes to oppose it. This seems to capture a crucial turn in developing the new metaphysics of broad currents of the left in the neoliberal transnational networked state: a duality of the plural state versus the event. The event is a continuation of the model of revolution which dominated left politics up to the 1960s revived in a new incarnation

10 For an extended discussion of this see Papadopoulos, Stephenson and Tsianos (2008, chapter 2 and 3) and Stephenson and Papadopoulos (2006).

11 As Peter Hallward writes: 'Over the course of the last forty years Badiou has never compromised on his essential revolutionary commitment, but the development of his philosophy suggests a qualification of its expectations. In his early work the eruption of inconsistency (in the form of mass insurrection) figured as an evanescent but directly historical force, and the project to make the state "wither away" had a literal and immediate objective. In *Being and Event* he developed an ontology which accepted the state as an irreducible dimension of being itself: consistency is imposed at both the structural and "meta-structural" levels of a situation, and a truth evades but cannot eliminate the authority of the state. In *Logics of Worlds* he has gone a little further still, by admitting that the very process of being's appearing ensures that it must always appear as consistent. The upshot is that "inappearance" comes to serve as a de facto criterion of commitment and truth. In a world structured by compromise and betrayal, Badiou's motto has in effect become: trust only in what you cannot see' (Hallward, 2008: 120-121).

which puts again the primacy on state power and announces the end of the posthumanist exit to an immediate ordinary embodiment of politics.

Faithful to the left's obsession of revealing the chosen radical historical subject in each particular period and, simultaneously, succumbing to the weight of the social and political realities of networked neoliberal capitalism that defies the existence of any such historical subject, much of the contemporary left (especially the academic left) sees in the event the possibility of sustaining a new radical vision of change after the demise of revolution. The difference between revolution and the event is one which pertains to time. Revolutions are made. Events need to be designated in retrospective, they exist as such in the past, they come after the fact. Only once they happen can one designate them as events. If we privilege their role for social change we do so at the expense of considering the potentia of the continuous experience in the present that is made of people's embodied everyday practices (Stephenson and Papadopoulos, 2006): the practices employed to navigate daily life, to sustain relations, to remake the materialities of our bodies, all those practices which are at the heart of social and material transformation long before we are able to name them as such. The event is retroactive, the power of distinction between what is and what is not post hoc. At the end it carries the sadness and fear to designate something as an event because it has not happened yet. A sadness resulting from the inertia induced by fear of making the wrong choice or even more a fear which is the outcome of thinking in terms of making or not making choices. And with Spinoza we know: the mob inspires fear when it acts, but it only does that if it is unafraid; the mob is terrifying if it acts, and it acts if it is unafraid and therefore it has to be tamed by the State and Religion with sad passions (1996, IV.54). Derrida (1992) attacked this logic of choice by assuming that undecidability is a permanent ingredient of any decision; the final undecidability of any process of making and actualization is not the ground of 'sad passions' but the necessity of *practice*. From a very different and much more radical posthumanist feminist perspective we could say with Starhawk (2002) that practice is not about retroactive choice but about the 'power to act with' in the remaking and reclaiming of the material realities of life. Actualisation exists because 'the ghost of the undecidable' (Derrida, 1992: 24) dwells in every step, in every practice, in every situation. There is no promise, no guarantees, no fidelity. Expecting the event we lose touch with present, apparently innocuous and imperceptible, everyday transformation.

Probably the best remedy against the sad passions is to refuse repeating endlessly the fidelity to the coming event, to the new truth or to the new historical subject to come. But the path is not a fidelity to the present, but joy of embodying and betraying it. This is the joy of the second posthumanist moment of the left, which was absorbed and effaced in the intricacies of the eventful networked cultures of transnational neoliberal capitalism. Instead of the pretentious and concerned waiting for the event one could think with Bakhtin about a form of joy which defies seriousness and makes truth erupt out of the present. The joy of bringing together and assembling a whole cosmos around everyday radical material practices which are events that might never be named as such (Bakhtin, 1984: 285; see also 94ff.). In the same way that Bakhtin is searching in Rabelais' grotesque images of the lower stratum of the body (food, drink, urination, defecation, sexual life) for the forces that escape ecclesiastical and political censorship and coercion, I am searching in the posthumanist embodiment of politics – the joy of

changing bodily practices and fusing with new ingredients and processes in this world – for the forces that defy both the cognitivist left fixation with events and historical subjects to come as well as the circulation of class privileges in the aseptic circuits of contemporary networked neoliberal capitalism. The laughter and joy of those who partake in the world through remaking their embodied existences defy seriousness, disperse fear, liberate the word and reveal a truth that escapes the injustices of the present. This is a cosmic constellation, not an individual act. It is in this feast of eating, drinking, defecating and having sex that the body becomes posthuman, that it retraces within itself and stresses elements common to the entire cosmos, as Bakhtin says: common to the earth, sea, air, fire and all the cosmic matter and manifestations (Bakhtin, 1984: 318; see also 335ff.). The practice of alternative material embodiments is the heart of the erased second posthumanist gesture of the left, which is nevertheless inscribed into our imagination of radical social change: with Anzaldúa (and I'm thinking here also of Jose Martí and Oswald de Andrade and many others) I see how radical change passes through the posthumanist transformation of the materiality and social relationality of the body when she says that 'she is willing to share, to make herself vulnerable to foreign ways of seeing and thinking. She surrenders all notions of safety, of the familiar. Deconstruct, construct. She becomes *nahual*, able to transform herself into a tree, a coyote, into another person' (Anzaldúa, 1999: 104). Anzaldúa is non-humanist in a very immediate sense. The way in which she refers to becoming coyote is not the romantic vision of joining nature nor the becoming-animal of joining the idealised pack (such as Deleuze and Guattari's wolf pack). Anzaldúa's becoming coyote is rather ethopoietic: the boundary crossing of her coyote existence is that of an everyday transformation of ethos required by living as an 'inappropriate' body in either sides of a border (Mexico/USA) – a chicana lesbian – reclaiming her otherness as an embodied strength that refuses to be appropriated. It is also required in order to account for all the changes that so many fellow people undergo as they cross the Mexican/US borders to live a clandestine life below the radar of surveillance (Papadopoulos and Tsianos, 2007). This embodied politics explored by a feminist, queer, migrant minoritarian body betray representation – rather than claim inclusion by the state – and challenge left identity politics by undermining its fundamental ground: humanism.

4. Post-anthropocentric history: Worlding justice

The question is then: how can we think posthumanism and radical left politics outside of mainstream posthumanism as well as outside dominant left traditions that focus solely on the obtaining of social power? How can left politics become more posthumanist (again) and how can posthumanism become more left again? In all previous incarnations of radical posthumanist left politics I described a picture which is not articulated through the fidelity to a situation which supersedes the state but through betraying the political thinking and everyday action regulated by the state. This is because the constituent force of left politics seems to be vanishing and the dialectic of constituent and constitutive power becomes the very ground on which control operates today. The constant focus on the state, which has exhausted the radical political potentials, leaves radical left politics in a space of powerlessness and simultaneously in a space of possibility. What then is radical left politics when it is not an antithetical subjectivity? Perhaps we can start with a speculation: the space of possibility for radical

left politics today lies once again in a posthumanist gesture which is about making alternative forms of life.

I borrow the term *forms of life* from Langdon Winner (1986, especially Ch. 1), a term which Winner traces back to Wittgenstein as well as to Marx. In forms of life we encounter a re-weaving of the social and the material through the insertion of practices and technologies. But much can be said about this idea of insertion. A practice, a technical device is not just applied or used. It does not just enter into an existing organisation of life. Rather a form of life is remade through it; a practice, a set of practices, a device, a new form of relationality becomes part of a given form of life by changing it. There are no users, no tools, or disconnected actions, no individual actors (human or non human), no subjects-objects. There are just forms of life which set up the material constraints of what we are. Wittgenstein (1958: 226): 'What has to be accepted, the given, is – so one could say – *forms of life*.' Acting within such forms of life is the possibility for instigating justice in conditions where its deferral is promoted by both state power as well as much of the contemporary left. Justice in this sense is the making of alternative forms of life – wherever this can happen, whenever this is possible. Every social context, every material arrangement, every moment has enough space for conflicting forms of life: alter-ontologies. There are no closed spaces, there are no lost spaces. Re-appropriation and reclaiming is the practice of liberating closed terrain. It is a practice which happens on the ground, through a form of politics which is beyond the existing coordinates of the representational politics of the left. And this making of alter-ontologies, that is the acting within alternative forms of life, points again towards a posthumanist gesture, perhaps one which is more radical and deeply transformative than all the previous ones.

It is crucial here that these alter-ontologies are primarily engaging with matter, that they practise the politics of matter. This is probably the most profound dislocation of left politics that posthumanism has affected, a post-anthropocentric politics. It is a moment which has been so aptly described in recent attempts to discuss posthumanism as the co-construction of life with other species and technical apparatuses (Badmington, 2004; Haraway, 2007; Wolfe, 2010). But there is not much in these studies about politics. Although some kind of critical politics is silently presupposed it is never explicitly discussed. What are the repercussions of these post-anthropocentric world-making practices for left politics? A post-anthropocentric ecological view of history is the ability to transform the material conditions of existence in such a way that it cannot be neglected or bypassed. I want to think here of the making of lively ecologies as a form of material transformation that instigates justice as an immediate, lived, worldly experience. I want to think of the ethical coordinates of radical action that can set posthumanist left politics in motion.

Walter Benjamin's (1996) *Critique of Violence* opens possibilities for answering these questions. Benjamin explores the possibility of action which can open political spaces outside of the eternal cycle of law making (constituent) and law preserving (constituted) power. There is a form of power/violence, the German word for both is *Gewalt*¹² – Benjamin uses various terms to describe this form of *Gewalt*: revolutionary, pure or

12 For a discussion of the ambiguity of the term *Gewalt* see Balibar (2009).

divine – which is neither law-making nor law-preserving and which, through its pure existence, addresses justice. He asserts that Gewalt, ‘when not in the hands of the law, threatens it not by the ends that it may pursue but by its mere existence outside the law’ (Benjamin, 1996: 239). The reason for this is that this kind of Gewalt can ‘modify legal conditions’ (Benjamin, 1996: 240), that is, it can be a form of Gewalt which breaks the monopoly of law over power and violence itself. When Gewalt is *outside* the law it is a form of Gewalt which is induced in a situation rather than being given in it. Gewalt which is given in a situation is the Gewalt which the law can exercise, and this form of Gewalt appears as fate (Benjamin, 1996: 242). The Gewalt of the law is always reinstating a political order that is different from the previous one but equally coercive: the Gewalt of the law appears as fate, as cyclical history, as inescapable. The new form of Gewalt that Benjamin tries to introduce is non-fate. ‘[P]ure unmediated’ Gewalt (Benjamin, 1996: 249) gets rid of the narrow sighted ‘dialectical rising and falling in the lawmaking and law-preserving’ forms of Gewalt (Benjamin, 1996: 251), it overthrows law altogether. It is within this new space of Gewalt that a ‘new historical epoch is founded’ (Benjamin, 1996: 252).

How can we populate this space, fill it with acts of justice before and independent of the law of the state? I am not talking here of clichés such as taking justice in our hands, nor of blank apologies of violence, but of possibilities for creating spaces of polite engagements and respect that are not dominated by an anthropocentric humanistic view that continuously restores a new coercive form of law after the other. It is not a coincidence that I turned earlier to Bakhtin to evoke the space where justice can be enacted: the ordinary materiality of existence which Bakhtin describes so wonderfully in *Rabelais*. In Benjamin this is further developed: the realisation of this new form of Gewalt outside of the law is the space of the ordinary, or better it is a space which starts from the materiality of the ordinary. I want to link Benjamin’s ‘other type of Gewalt’ to the ordinary, to see how and if radical left politics can be grounded in the radical making of alternative forms of life and everyday materialities which exist outside the law.

Against the perspective that sees radical left politics as targeting the exceptionality of law, social power and the state, I find with Benjamin that the only possibility to break the cyclical historical time and the anthropocentric passing of history is by mobilising this other type of Gewalt. That is, to enact justice *independently* of the existing law. Benjamin exemplifies this in his example of the general strike: the general strike is so unthinkable from the perspective of the law because it destroys the ordinary life of society since the workers exit from the role which is assigned to them by the law. They become a *non-subject*. And they do this immediately, now: the general strike as a form of divine and revolutionary Gewalt is ordinary and exists now, in der ‘Jetztzeit’.¹³ I’m not interested here in the general strike as such. I don’t even want to use it as an example or to think of its political applicability and meaning today. Rather, what interests me here is how Benjamin introduces a crucial dimension for understanding justice which has not only to do with its spatiality but with its temporality. Given that justice is never here, it is something of another world to come, Benjamin sees divine

13 For an extended discussion of the meaning of the proletarian general strike in Benjamin see Tomba (2009, 139ff.).

violence as the termination of deferral. Rolland Munro's work (2004) provides us with an important insight in the temporality of justice: justice is now, justice is against deferral, the space of deferral is the space of law, the space of deferral is the space of managerialism. Benjamin's divine Gewalt is that which dismantles the very possibility of law which is the deferral of justice. It is the moment where something which is just, happens just now. And paradoxically this is the end of Gewalt and of individual violence. The more justice is ordinary and happens just now, the more non-violent and collective it is. The temporal and spatial qualifications of divine Gewalt describe a form of justice which I want to foreground here as the main possibility for radical left politics today, its immediateness. When justice is ordinary and now it happens without mediators (Benjamin, 1996: 247), a justice without intermediaries; it is a justice which operates without diplomats, referees, experts, translators (so common in contemporary social theory, see for example Latour, 2004; Stengers, 2005). Divine violence, *immediate* justice, the moment when mediation stops. 'Just-ice takes places in the time of the stop', as Munro (2004: 64) says.

This form of radical political action is a form of processual and material justice which rather than being concerned with pragmatic or normative issues is concerned with altering the material conditions of existence starting from positions marked by asymmetry and injustice: thick justice. Let's turn 'thick description' (Geertz, 1993) upside down: thickness for Geertz is semantic, let's look for material thickness instead; practice for Geertz is text, but what about action as matter.¹⁴ Thick justice is the beating heart of radical posthumanist left politics. This could offer an alternative view on what many contemporary social theorists and social scientists call ontological politics, cosmopolitics and action in actor networks (Latour, 1987; Law and Hassard, 1999; Stengers, 2005). In all these approaches symmetry is required in order to grasp how the human and nonhuman constitution operate together and how they produce new mixed hybrid forms of existence and associations with various elements of a network. Instead of clear cut classifications and orderings of beings these positions multiply the possibilities of how beings can connect to each other. This is of course a legitimate perspective which responds to either traditional humanists who attempt to defend the exceptionality of humans or to deep ecologists who put the emphasis on the independence of nature and its primacy of value. So far so good. But this position cannot help much if we accept that these clear-cut distinctions between the cultural and the natural do not exist. It is even more limited if you take hybridity not as something which must be defended or argued for, but as something which is a given and a starting point for action. The real question facing posthumanist left politics is how to move beyond anthropocentrism and humanism by maintaining a commitment to the problem of justice that pervades socio-technical assemblages. The third dimension of posthumanism I am describing here is post-anthropocentric because *we* have indeed never been human; but we have never been human not because we have never been modern but because 'we' have never been *we* and 'they' (the nonhumans) have never been *they*. The post-anthropocentric dimension of posthumanist left politics is neither about developing an ecological egalitarianism that considers the value of all nonhuman

14 See for example how this transition takes places in Haraway's work: from the thick descriptions of representation in *Primate Visions* (see Haraway, 1992, especially Ch. 3) to the thick inter-species traffic of matter and meaning (Haraway, 2007).

beings as equal¹⁵, nor about creating the grounds for the articulation of constantly novel connections and concerns between us and them (see Puig de la Bellacasa, forthcoming). Rather, it is about making alliances and engaging in practices that restore justice in the immediate ecologies which *certain* humans and *certain* nonhumans are inhabiting in deeply asymmetrical ways.

Such a move is only possible if there is an evacuation of the universalising categories human/non-human. It is not a symmetrical perspective that is needed here in order to multiply their possible connections, but rather a commitment to start from the asymmetrical registers that *certain* humans and *certain* non-humans occupy in an assemblage. This is not an asymmetry between human and non-human actors in an assemblage, it is an asymmetry that in some cases will start from the position of certain humans rather than others, in other cases from certain non-humans rather than other non-human beings. It is a generalized asymmetry that attempts to put the emphasis on those positions which address in the best possible way the question of justice as a means of promoting direct interventions in an existing socio-technical assemblage. These interventions are about building alternative forms of life and connecting them together into shared commons. An association of such forms of life into common spaces – alter-ontologies is the term used to describe the eco-commons emerging today – can ultimately *account for* the multiplicity of hybrid life forms that contemporary technoscience and global capitalist production unleash. It is about acting within and against these conditions in order to fulfil the responsibilities that the world-market announces but cannot complete. The question for alter-ontologies is then the question Marx asks in the *Manuscripts of 1844 Manuscripts* mentioned in the beginning of this paper: who controls collective self-transformation (Dyer-Witheford, 2006)? How can we develop alternative hybrid forms of life that have as their effect the *worlding* of justice? Chris Connery, Rob Wilson and the work of Center for Cultural Studies at the University of California in Santa Cruz fashioned this term to show the many divergent trajectories and speeds that criss-cross globalisation. The worlding project is about enacting an opening in our thinking and practice to other values, ideas and ways of being (Wilson and Connery, 2005). I want to take this seriously and to read worlding not only as an opening to other social ways of being, but to other material processes as well. What does it mean *to world* justice today if not to enact openings, to build associations, to craft common, alternative forms of life? Worlding justice is a form of posthumanism which evolves out of the long tradition of the left by escaping its fatal obsessions with social power, the state and the event to come, and simultaneously avoids the happy and hopeless posthumanism that is content with counting and recounting the connections between humans and nonhumans. This is insurgent posthumanism.

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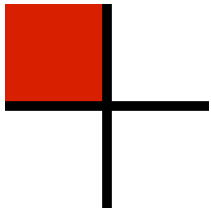
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The primitive, technology and horror: A posthuman biology

Norah Campbell and Mike Saren

abstract

Recent works have explored the concept of posthumanism as a radical decentring of the human, humanism and the humanities in the wake of the complexification of technology and systems, and new insight into nonhuman life (Pettman, 2011; Wolfe, 2009). In this article, we argue that posthumanism is not just an epistemology (Wolfe, 2009), but an aesthetic that blends three elements – the primitive, technology and horror. The interrelation of these three elements produces an aesthetic sensibility, that says three things about non-humanist conceptions of life. First, we draw attention to *metamorphosis* as an engine that encourages the viewer to recognise life not as being, but as perpetual becoming. However, as an antidote to the liberatory promises of ‘flow’, we specifically argue for a distinction between *morphing* and *mutating*, showing how each articulates opposing fantasies of posthumanism. Second, the concept of *primal technology* is introduced, which injects the humanist understanding of technology with an alternative, subterranean and posthuman supplement. Third, *proto-atavism* introduces the concept that multiple paradigms of life exist on the peripheries of humanist life. Ancient and future evolutionary traits exist in the *present* – both in the aesthetic imagination and in everyday life. Ultimately, we work towards a more wide-ranging idea – a *posthuman biology* – an ethical imperative which reminds us that, in a technological age, life is no longer containable in ‘simple’ life.

Introduction – techno-anxiety

The Golem, one of the oldest legends of artificial creation, may have originated as wooden or clay models of human beings that were placed in graves to act as servants of the dead. A fear that life itself could be conjured up in this mass of wood or clay through the power of Jewish cabbalism rendered the Golem an ambivalent figuration, supposedly the servant of man, but one that threatened to overpower him. The Golem legend can be traced back to Jewish psalms of the 6th century, where the formation of life (*golmi*, literally ‘unformed limbs’), was seen as something that could emanate both from the mother’s womb *and* from the (nonhuman) earth itself (Graham, 2002: 87).

The Golem is an example of a perennial horror in the western imagination, and it is striking how it exemplifies that western humanist versions of technology tend to create a master–servant dialectic and anything that threatens this divide invokes horror. With its fixation with ‘Frankenfoods’ and genetic engineering technologies (Thompson, 2004: 165), the ‘revenge of nature’ or ‘nature out of control’ leitmotif is a common one in the contemporary west, its roots embedded in the Romantic tradition. However, since

antiquity, technology has been simultaneously imbued with magic and rationality, evil and redemption, trickery and transparency (Scheper-Hughes, 2001).

Modern science has significant origins in medieval alchemy, astrology, and other occult arts (Davis, 1999). In the Hermetic tradition of the Renaissance, ancient fascinations with automata were reinvestigated and reinvested with scientific concepts. Descartes, the philosopher who provided the western imagination with the most enduring model of the human to date, was fascinated with the automaton, comparing it to the human body, and thus creating an enduring preoccupation with mechanism as something that pervaded machines, bodies and animals but never the non-material, spiritual realm of the mind.

As well as the considerable eschatological significance attached to technology (Wagar, 1982),¹ it is possible to discern a ‘doubleness’ (Bell, 2001: 7) surrounding technology; a desire for it and a dread of it that speak of the ambivalent position that technology still maintains in the west today – a ‘schizoid’ stance, alternating between the technophobic and the technophilic (Thompson, 2004). Huyssen (1986) attributes this to the two poles of experience people had with new technologies in the late 19th century. On one hand, technics was aestheticised and fetishised (world expos such as the Crystal Palace, garden cities, the *cit  industrielle* of Tony Garnier, the *Citt  Nuova* of Antonio Sant’Elia, the *Werkbund*), and on the other the military machinery of World War I which alienated human life while at the same time making the human inhuman (Seltzer, 1992). The avant-garde expressed this bipolar experience in various ways in Dadaism, Futurism, Cubism and Constructivism (Rutsky, 1999)

Throughout western human history we can observe technology as revolt. In the double sense of the word, technology is imagined as rebellious and repellent. Why is this so? Baudrillard’s (1968) psychoanalytical reading of technology describes it as a force which, despite its outward association with progress and human civilisation, is perennially ‘haunted by the temptation of a reverse evolution which coexists in it with the potential for progress’ (Baudrillard, 1996: 130). In his eyes, humans unconsciously produce technologies that are partly dysfunctional, and hence will never be infallible, because humans are terrified of the potential infallibility of the technological. We could call such an imaginary ‘techno-anxiety’.

Many of these diverse concepts seem to conflate the primitive, technology, and horror. These three tropes may seem unrelated and contradictory, but in this article we will first of all explore each trope in turn, and consider what these interrelations can tell us about the logic of contemporary technoculture. Following this we will attempt to tie these tropes together by placing them in the wider context of studies on monsters, also known as teratology. We will use a sample of images from contemporary visual culture that blend together the aesthetics of the primitive, technology and horror. Turning specifically to advertising, we will explore two exemplars of this visual economy in detail – Nike *Mutant Foot* (Publicis Mojo, Melbourne, 2005) and Audi *Spider* (Lynn

1 Wagar argues that ‘an apocalyptic imagination’ exists in the western world, arising from the fears surrounding ‘the ends and the beginnings of self’, the ‘dread of nature’ and the ‘lethal effects’ of science and technology (Wagar, 1982: 66–67).

Fox, London, 2005). While concentrating on these two primary texts, we will draw from a larger intertextual repertoire consisting of advertising, film and other images in visual culture to bring to light the different facets of the dynamic that is created when the primitive, technology and horror come together. We argue that the aesthetic conflation of the primitive, technology and horror points to three new concepts. We call them *metamorphing*, *primal technology*, and *proto-atavism*. Metamorphing is a prevalent technique which does two things. It points to a logic of identity as a constant state of becoming and it emphasises flow as a necessary way to understand processes, objects identities. We critique the almost universal celebration of flow in contemporary philosophical thought. Primal technology is a concept we use to contradict the humanist and pervasive concept of technology as (i) modern, (ii) progressive, (iii) clean and (iv) nonalive. Proto-atavism is a concept we introduce as a supplement to atavism – the idea that evolutionary traits from the past can exist in the present. In contrast, proto-atavism argues that evolutionary traits from the future can also exist in the present. In explaining these terms, we argue that they present us with fantasies about technology which enliven the cultural imaginary. Together, they work to produce a conception of life which we could understand, paradoxically, as a type of ‘posthuman biology’.

A) Technology and the primitive

There are deep contradictions and connections between the primitive and technology. Historically, the primitive has mainly been conceived as the Other of western civilisation recorded in simple terms as a site of primordial simplicity or originary unity (Foster, 2003: 384; Derrida, 1997: 119 This is because the history of technology is told from a western lens – one that is predicated on gradual progression and sophistication of the technical:

the presence or absence of specific technologies has often been read as a marker of cultural ‘backwardness’... Technology is [thought of as] something that comes from the West and does something to other people in other places, such as the ‘Third World’ – a framework which, even when well-intentioned, denies both agency and contemporaneity to the ‘other’. (McQuire 2006: 255)

But to say that the primitive is simply that which existed before technologies of progress is to ignore the complexity of this important concept. First, technological progress is not a force that is unique to modern ‘civilised’ society; it is intimately bound with art and antiquity – the primitive and the technological arise from the same logic (Heidegger, 1977; Wills, 2008). Heidegger asks us to consider that original conception of technology as manifest in ancient Greece. Then, technology referred to the ways in which realities are brought into the world; technology was not a mere means or instrument, but a mode of ‘unconcealing’ [*her-vor-bringen*] reality (Heidegger, 1977: 10). However, as Heidegger reminds us, every unconcealment of reality is also by necessity a concealment of another reality: ‘Bringing-forth-hither brings hither out of concealment, forth into unconcealment’ (Heidegger, 1977: 10). Such a process Heidegger calls *poiesis*, from the Greek concept of ‘bringing-forth’. The ancient Greeks realized this profundity about technology, argues Heidegger, and he points out what western consciousness has forgotten: that the Greek word *technē* referred to both technology and art.

Second, the absence of technology has often served as an indicator of primitivism without any sort of reflection about what one might mean firstly by technology and secondly by the primitive. So-called primitive societies such as paleolithic hunters have been shown to have been affluent and technologically advanced (Douglas, 2006: 72-76; Rutsky, 1999: 2-3; Sahlins, 1976). McQuire (2006: 255) argues that technology is read through a uniquely western historical lens; 'the presence or absence of specific technologies has often been read as a marker of cultural "backwardness"... Technology is [thought of as] something that comes from the West and does something to other people in other places, such as the "Third World" – a framework which, even when well-intentioned, denies both agency and contemporaneity to the "other"'. As an antidote, Edgeton (2006) speaks of 'technologies of poverty' such as the bidonvilles or networked and provisional 'shanty towns' in parts of India – overlooked because we favour 'rich-world' technologies.

Third, on an aesthetic level, many subcultures of high-technology as diverse as rave culture and 'new-age' science incorporate primitive icons of shamanism, esotericism, hermeticism, the occult and mythology into their philosophies, exhibiting a strange aesthetic that we could call 'technological primitivism' (Davis, 1999; Stefik, 1996)². Fourth, despite the proliferation and sophistication of technologies in the west in the nineteenth and twentieth centuries, we still often associate them with the occult, the preternatural, and the uncanny (Sconce, 2000; Freud, 1925). The era of telegraphy, for example (1844 saw the first official test of an electromagnetic telegraph line), re-activated ancient and repressed fantasies about the mind coming loose from the physical body and travelling great distances without the constraints of time and physicality. In Sconce's words: '[f]or a world that had waited weeks to receive messages across the ocean, and days to receive messages from across the nation, the ability to contact London from New York in only seconds must have truly tested the limits of credulity' (Sconce, 2000: 19). The new technology of telegraphy was appropriated by the New Spiritualist movement which saw the telegraph as a high-tech 'medium'; if it could cross the Atlantic in seconds, it would surely take only another few seconds to contact the souls of the dead.

B) Technology and horror

From a visual culture perspective, visions of horror have always been interesting because they were theorised as conduits to the unconscious fears and desires that exist in the cultural imaginary (Smith and Higgins, 2000; Hardy, 1996; Russo, 1994). Despite this, the construction of horror in commercial images is under-theorised, viewed in the narrow sense of fear appeals that act to discourage or warn (Ford, 2006; Shimp and Stuart, 2004; LaTour and Rotfeld, 1997). Like the primitive, horror is a historically specific form and not an eternal constant; what constitutes horror in one age may be

2 For example, the Esalen Institute founded in California in the 1960s, and dedicated to developing radical psychology was an eclectic blend of yoga and science, but 'amidst the body oil, drug trips, and nude hot tub comminglings, the headier characters of Esalen also helped refashion the paradigm of cybernetics and information theory into a hands-on, and dispassionate approach to the new mutations of the bodymind' (Davis, 1999: 181).

completely ‘unhorrific’ in the next, and vice versa (Halberstam, 1998). Further, horror is an aesthetic that can often merge elements of science-fiction and primitivism, as evidenced in films such as *Johnny Mnemonic* (1995), *The Island of Dr. Moreau* (1996) and *I Am Legend* (2007). Horror is sometimes conceived of as a liberatory or avant-garde, genre because one of its functions is to disturb cultural and ideological categories we may have taken for granted. As with the trope of technology and the primitive, this may provoke a feeling of ambivalence (Jones, 2002; Tudor, 1997; Carroll, 1990). At the same time, horror may also be viewed as a genre that repeats stereotyped images of female-as-victim and female-as-horror, which maintain the apparatus of phallogocentrism (Halberstam, 1998).³ Therefore, we argue that the genre of horror is *undecidable*; neither entirely reactionary nor entirely liberatory, it works to produce figures that contain within them an overflow of contradictory signs.

The 20th century produced a vast and complex canon of literature and film which depicts technology out of control, inducing horror in the humanist consciousness. In social life too, high-tech machines induce horror. Bruno Latour suggests that this is because technology appears to most people when it is at its finished, completed stage – appearing suddenly and already fully formed, and therefore alien and inhuman – ‘fall[ing] on [our] heads like an external fate as foreign, as inhuman, as unpredictable as the olden *Fatum* of the Romans’ (Latour, 1987: 15).⁴ This feeling of inhumanness associated with technology makes it seem unpredictable, beyond human calculation.

Within the complex vista of contemporary identity, there is a marked trend in contemporary culture for borderline or liminal figures which are both primitive and technical – replicants, androgynes, zombies, androids, posthumans, avatars, clones, the undead and such ‘almost-not-quite ontologies’ (Thrift, 1998: 124). Globalisation, questions of history, social change and political movements, as well as the collapse of communism (Woodward, 1997), fundamentalism, feminism and post-communist nationalism (Braidotti 2005), global immigration flows (Rodowick, 2005), as well as the massive trans-national projects of the Human Genome (Thacker, 1998) and the Digital Human (Waldby, 1995; Waldby, 2000), create new processes and quasi-objects which seem not to rest one or other side of humanist dualistic concepts. Such processes and objects confuse the distribution of values according to simple self-other dichotomies, displacing the unitary subject of classical humanism (Braidotti, 2005; Hayles, 1999; Haraway, 1997).

The possible connections between and within the terms ‘mothers’, ‘monsters’ and ‘machines’ are used by Braidotti to theorise alternative paradigms of identity (2000; 1997; 1996a; 1996b; 1994). By looking at the historical interconnections of these three themes, she shows how configurations between them can produce new ways of thinking

3 ‘[I]t is not always so simple to tell whether the presence of Gothic registers a conservative or a progressive move’ (Halberstam, 1998: 23).

4 The idea of the *Fatum* comes from ancient Rome, and it means something said or spoken (from the verb *fari*, ‘to speak’). It was believed that only divinities uttered *fata*, mostly in poetical literature. The presence of the *Fatum* reminded the Romans that their lives were controlled by divine fate, a fate that was often cruel and unpredictable. Latour (1987) notes that the imagination of technology is sometimes like the *Fatum* of the Romans; it seems beyond human comprehension, and has a life of its own which controls human destiny.

about being human in contemporary debates (such as those concerning biotechnology and artificial reproduction), and induce theory-building on science, technology and human identity to produce paradigms of 'alternative subjectivities' (Braidotti, 1994: 1). The terms 'monsters' and 'machines' are used in the broadest senses; 'machines' referring to the scientific, political and discursive field of technology (Braidotti, 1997: 61), while 'monsters' emblematises the history and philosophy of the biological sciences, as well as their relation to difference and different bodies. For example, the Enlightenment project worked to create a comprehensive philosophical and scientific discourse which positioned people of colour, native Australians, females, slaves as 'nearly-humans' vis-à-vis the liberal human (male, white) subject. Other nearly-human creatures such as scaipods, cynocephali, tailed men and giants also inhabited the Enlightenment imaginary: '[I]n the interstices between humans and apes, there was plenty of space to locate speculative or imaginary creatures: *similitudines hominis*... beast-men, monsters with human resemblances, or examples of degeneracy' (Fernández-Armesto 2005: 66).

The posthuman has been called 'one of the most important concepts in contemporary literary theory, science studies, political philosophy, the sociology of the body, cultural and film studies, and even art theory' (Gane, 2006: 431). It is a term associated with celebratory declarations of the end of humanity as we know it, heralding an era when human being will be superseded by technical being, which, ironically, promises to vouchsafe human being for eternity. It is also used as a liberatory term which seeks to displace the arrogance of the human, humanism and the humanities as the ultimate and sole authorities of meaning. Therefore it is a nascent term that is replete with ideological positions which range from the horrific to the hopeful (Campbell et al., 2010). Horror accompanies the posthuman when seemingly immutable spaces are crossed between boundaries (animal, human, inanimate or technological). Squier (1995) examines the circulation of three images in visual culture which she argues cross the space of the immutable human being – the ectogenetic foetus, the surrogate mother and the pregnant man (Image 1). She remarks that such images serve not so much to articulate a single ideological position, as to provide a site on which positions *can be contested*.

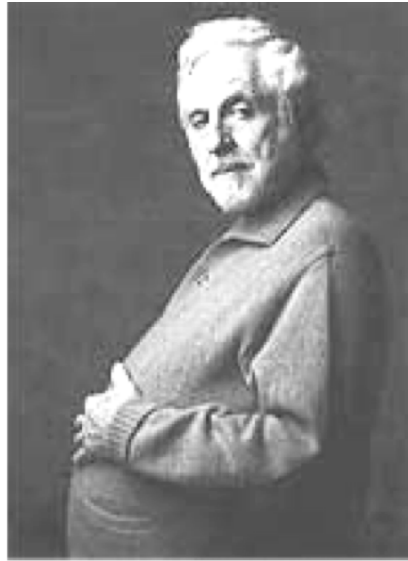


Image 1 'The Father of the Phill, Dr. Carl Djerassi as a pregnant man' (J. McDonald, 1992, in Squier, 1995: 114)

Adding to this, we argue that images which conflate the primitive, technology and horror not only contest, but also evoke, humanistic taboos of previous eras. Such an evocation-contestation dynamic is often evident in images of the pregnant men and in the fear-fantasy of miscegenation.

Monstrous logic

Having related the tropes of the primitive, technology and horror, we now place them in a wider context of studies of monsters, also known as teratology. Monsters are not just physical manifestations; the term monstrous can also characterise written texts, especially when they seem to defy canonical categories, or when their meanings erupt ordered interpretative strategies, are manifestations of this axis. Halberstam (1998), for example, uses the term 'Gothic' not simply as a genre, but to describe any type of text that makes coherent interpretation fail, because the text suffers from an overload of contradictory meanings which make it literally fall apart at the seams⁵. The trace of the horrific within the aesthetic, the primitive within the highly technological, and the inhuman in the human is evident in Gothic fiction such as Shelley's *Frankenstein* (1818), Stevenson's *Dr. Jekyll and Mr. Hyde* (1886), and Stoker's *Dracula* (1897).⁶

The monstrous is also a strategy which subverts humanist projects, especially when it defies neat categories, or when its meanings disrupt ordered interpretative strategies. Derrida's project of deconstruction invokes elements of the primitive, technological and horror; a project he describes as making people 'turn their eyes away when faced by the

5 'The production of fear in a literary text... emanates from a vertiginous excess of meaning. Gothic, in a way, refers to an ornamental excess (think of Gothic architecture – gargoyles and crazy loops and spirals)' (Halberstam, 1998: 2).

6 For example, on *Dracula*, Halberstam comments: '[h]e is monster and man, feminine and powerful, parasitical and wealthy; he is repulsive and fascinating, he exerts the consummate gaze but is scrutinised in all things, he lives forever but can be killed' (Halberstam, 1998: 88).

as-yet unnameable which is proclaiming itself, and which can do so, as is necessary when a birth is in the offing, only under the species of the nonspecies, in the formless, mute, infant and terrifying form of monstrosity' (Derrida, 1978: 293).

Milburn (2003: 603) remarks that in Derrida's work 'the figure of the monster embodies a means of thinking otherwise – a means of passing "beyond man and humanism" and reaching for other posthuman futures – that have travelled under the name of deconstruction. The "event" of the Derridean text, signalling a "rupture" with the discourses in which it gestated, terrifies with its unprecedented deformation of the normal and its threat to the boundaries of conventional thought'. Milburn draws a similarity between Derrida and Darwin: both were engaged in the practice of revealing monstrosity to the world, whether biologically through the dissolution of the human into the animal, or philosophically by the dissolution of logocentrism: '[f]or Darwin and Derrida deconstruct Eden through Satanic invasion, releasing their hideous progeny into the garden gates, and as progenitors of a teratological discourse centralising deviance and empowering the alien... Darwin and Derrida themselves become the monsters in Eden' (Milburn 2003: 609). The juxtaposing of the discourse of posthumanism with that of monstrosity reminds us that posthumanism is not concerned simply with the 'future human', but with deconstructing the human as an ancient concept (Campbell et al., 2010).

The monster is also a term used to express a social identity. According to Braidotti, we live in the times of the 'postmodern Gothic' (2005: 173), where the social imaginary of post-industrial societies produces teratological, monstrous formations – monstrous precisely because their technological character transgresses conventions of taxonomical description. Her term 'cyber-teratological' describes her fascination with the grotesque and the technological. Her mission is to analyse what she sees as the growing numbers of *non-unitary subjectivities* (Braidotti, 2005: 172) that are emerging in post-industrial society. Teratology comes from Greek *teras* (Braidotti, 1997: 61), meaning both horror and marvel, while the term 'monster' comes from the Latin *monstrare*, which means 'to show' (the scientific imperative to 'de-monstrate' is thus a derivative of vision and monstrosity). In fact, since third millennium BC Babylonian culture, monsters were used for *teratoscopy* – that is, for prediction and cosmic divination as they were regarded as sites of otherworldliness (Braidotti, 1996a: 136). Braidotti (1997; 1996a) argues that monstrosity is something that both underlines and undermines the human by analysing what she sees as three eras of monsters. Greek and Roman civilisations carried a notion of a 'race' of monsters; as an ethnic entity that were both horrific and fantastic. The Baroque and Enlightenment eras began to produce a 'scientific' discourse of monsters. During this time, monsters were viewed as something wondrous and fantastic, rare and entertaining;

[j]ust like the madman, the dwarf and other marvels, [the monster] participates in the life of his/her town and enjoys certain privileges. For instance, dwarfs as court jesters and fools can transgress social conventions, and say and do things that 'normal' human beings cannot afford to say or do. (Braidotti, 1997: 68).

Braidotti characterises the third era of monstrosity as manifest in 'the genetic turning point in the post-nuclear era, also known as cybernetic teratology, and the making of new monsters due to the effects of toxicity and environmental pollution' (Braidotti,

1996a: 141). Thus, the conflation of the primitive, technology and horror, can be put in a wider context of a monstrous logic, which describes physical, social and philosophical monsters. We contribute to this work on teratology by introducing three concepts – meta-morphing, primal technology and proto-atavism. We will take images in contemporary visual culture to demonstrate that the cultural imaginary is preoccupied with these three concepts. We will briefly introduce two recent artefacts of visual culture – advertisements for Audi and Nike – in order to make concrete the three concepts.

Audi *Spider* (2005)

Audi *Spider* was designed by the advertising agency Lynn Fox (London) and post-produced by The Mill (London) for the launch of Audi's RS4 automobile in December 2005.⁷ Their brief was to create a heavily industrialised advertisement where Audi is likened to a predator, ensnaring and devouring its rivals.

The setting is a dark, eerie, industrial space, damp and leaking. Suspended throughout are dismembered cars entombed in masses of thick, moist and choking cobwebs (Image 5). The music suddenly alerts us to a scuttling, menacing movement within one of the cocoons. The sound of the violins is cacophonous; grating and off-key, it resonates with the scurrying movement of the creature. The camera zooms closer into one of these larvae-like webs; a car-wheel which is grinding to a halt is just visible. Inside the dark tomb is the cobweb-covered dashboard of a car from whose music device a song is playing. The music stops, ending in a strangled choke. We hear and see the scuttling of a spider that moves through the cocoon frenetically, falling abruptly to the floor. The camera zooms out to reveal the huge, bulbous, shiny black spider, which resembles a black widow, with prominent, skeletal legs. It fixes itself squarely in front of the camera and lunges towards us – the outline of its fangs and laser-like eyes flash for a brief moment. As it runs toward the camera screeching, it morphs into a shiny black Audi RS4 (Image 6). The advertisement ends with Audi's iconic message, *Vorsprung durch Technik* written in Gothic-style jagged, suspended cobwebs.

7 During this time Audi also sponsored a series of films in UK entitled 'Sinister Cinema', in association with Guardian press and Odeon Cinemas. The website includes analysis of the horror music for Audi's *Spider* advertisement (2005), as well as an investigation into horror film in general. [<http://film.guardian.co.uk/sinistercinema>]



Image 5 Audi Spider (Lynn Fox, London, 2005)



Image 6 Audi Spider: Black Widow sequence (Lynn Fox, London, 2005)

Nike *Mutant Foot* (2005)

Nike's *Mutant Foot* is a television and film commercial created by Publicis Mojo (Melbourne), and post-produced by The Mill (London), in August 2005. The brief specified a hybrid of the Nike Free Running shoe and a human foot. The aim of the advertisement was to convey the feeling that running with these shoes is like running in bare feet. The advertisement is described by the post-production agency as follows:

The Mill London [has] created what might be the “future of the foot” for the new Nike *Free Running* shoe commercial. Showing the potential evolution of the human foot, the spot shows us that in time we may evolve into only having one big toe with more flexibility and possibly gills so

that our feet can ‘breathe’... This “organic thing” is living and breathing in a world surrounded by micro organisms reacting to its movements.



Image 7 Nike, Mutant Foot (Publicis Mojo, Melbourne 2005)

Metamorphing – Fantasies of flow and a critique of becoming

In this next section, we will explore what these two artefacts of visual culture, dealing with the tropes of the primitive, technology and horror, can tell us about the posthuman imaginary today.

While Cartesian humanist logic speaks of a world of fixed entities and cleanly defined ontological systems, posthumanism is often characterised as polymorphic unfixity, articulating a logic of identity as decentred, ontologically confusing and in a state of transition (Braidotti, 2006; Badmington, 2003; Halberstam and Livingston, 1995; Haraway, 1989). In many of the images that collapse the primitive, technology and horror, we see a dynamic movement in the image from one entity to another. What does this tell us about the experience of the world of high-technology? In this section we will explore metamorphosis as an aesthetic convention. We will argue that the concept of morphing, or *flow*, is almost universally regarded as positive, or at least apolitical, in poststructural theory. We distinguish two types of metamorphosis, which we will call morphing and mutating. These two types of metamorphosis tell us about contradictory fantasies of posthuman existence.

Morphing

In images that contain the primitive, technology and horror, many types of boundary are transgressed. The term ‘morphing’ is used to describe the feats of an imagined technological posthumanism which cruises effortlessly and seamlessly through ontologies. One of the most iconic examples from film is the T1000 Terminator in the second of the *Terminator* film trilogy. T1000 is terrifying because it can instantly morph into anything and anyone in its vicinity. An apt corollary in advertising is

Nissan's *Pathfinder* (2006, image 9), which imagines a world where technology does not battle with nature; it moves in and out of them. Nissan's automobile envisages a shape-shifting technology which seamlessly moves between the animal and technical. This type of metamorphosis tells us something crucial about the cultural imagination of the posthuman. The automobile metamorphoses without any trace of its metamorphosis. It bears no marks, scratches, dents or damage, despite the impression of a mighty, industrialised rendering of one thing into another. This is a future world of ontological mobility; entities are not fixed; their morphing into other entities is not painful, but a natural, instantaneous reaction to their environment.



Image 8 'Shifting Capabilities' Nissan *Pathfinder* (TWBA, Paris, 2006)

Digital morphing is a common production device in contemporary visual culture, and it can have a distinctly uncanny effect. In *Faces*, (BBC, 2005) we see a visual representation of the experience of digital television (Image 9). In the advertisement, many small human heads morph together to form a giant, disembodied head that roams across hilly countryside.



Image 9 BBC *Digital Faces* (Duckworth, Finn, Grubb and Waters, London, 2005)

The first shot in the advertisement is a close-up of a single head, which asks: ‘Is it me, or does everyone seem to have digital television nowadays?’ The questioning of self is more than a rhetorical strategy; the camera zooms out to reveal many human heads, amalgamating to form a giant, larger head. What is horrific about such an image? Why did this advertisement evoke such a strong repulsion in its audience?⁸ This image works to disrupt the very icon of humanist thought – the head. The miniature heads seem frighteningly disembodied, while the meta-head morphs from shape to shape with many heads trailing behind. Both strategies emphasise the indistinctness of this head-like shape; an affront to a humanist sensibility of integral, bounded being. The eye sockets and the lips of the meta-head are especially horrific; instead of flesh and sinew they are filled with tiny selves. This image may be situated within the genealogy of monstrous and mythical forms – that of the homunculus. The homunculus was popular during the Hermetic revival of the Renaissance when the Swiss scholar Paracelsus (1493–1541) imagined that he had created a false human. That the human could create a ‘little human’ or homunculus by ‘unnatural’ means is a recurrent idea in literature and scientific endeavour.

A central debate in posthuman literature is whether consciousness has qualities that make it different from a material event. In other words, debates about humanness are broadly monist or dualist in approach. Dualistic notions argue that while there is indeed a material dimension to the human individual, certain qualities (which go under the various titles of ‘spirit’, ‘consciousness’, ‘soul’ or ‘essence’) exist on a plane which is beyond material analysis. The ‘mind’, or spirit, it is argued, is a uniquely human attribute which is separate from the brain, separate from mere material. A monist conception, on the other hand, argues that mind and other ‘immaterial’ processes are identical to any other brain process – they are essentially made up of the same stuff. A

⁸ The BBC *Faces* advertisement for digital television was removed in December 2005 after the British Advertising Association acknowledged complaints of its disturbing character.

posthumanist view would argue that all mental thought, all consciousness and spirit, can be attributed to the operation of micro-material processes distributed in the autopoietic (self-creating) body. In *Digital Faces*, we are confronted with a visualisation of the idea that the self possesses no central consciousness, but instead is a programme by many small autonomous, self-running programmes that can build to form a decentralised system (Deleuze and Guattari, 2004). This is why *Faces* is so disturbing on a level which is difficult to articulate; it represents the fear that the self is an amalgam of autonomous programmes – diffuse, material, beyond centralised control and above all, indistinguishable from the inside of a computer.

Images such as these speak about how morphing defies ontological fixity, showing how technology does not oppose nature, but simulates it (*Pathfinder*), how the morph causes a radical splintering of consciousness (*Faces*), and how it is a visualisation not of *being*, but of *becoming*. We argue that the dynamical aspect of existence often mobilises an attendant implicit belief that this is necessarily a liberatory view. Flow is regarded as the *sine qua non* of existence, and it is almost universally coded as positive. For example, in pointing out that the morph in contemporary visual culture enacts a logic of ‘quick-change’ which is embedded in our contemporary engagement with the entertainment and computer industries, Vivian Sobchack (2002) argues that morphing creatures have a deconstructive ability to destabilise dominant western metaphysical concepts. As a result, the social imaginary of the west is gripped by the imagination of excession; where entities slip and slide from one ontology to the other. Morphing is intimately related to the logic of high-technology. Technology theorists such as Donna Haraway (1997), Rosi Braidotti (2005) and Katherine Hayles (2005) theorise how contemporary technologies have caused many systems, objects and bodies to exceed their boundaries. Many embodiments of the era of high-technology are difficult to categorise; we are surrounded with artefacts that are collapsing humanist categories of existence, such as the cyborg, the foetus, the ecosystem, the database, the genome (Haraway, 1997), and the cellular automaton (Hayles 2005: 239–244) to mention but a few. As a result, the social imaginary of the west is gripped by the imagination of excession; where entities slip and slide from one ontology to the other, resulting in a loss of structure and a new sensibility of process and flux which is considered liberatory. In the next section, we consider the logic of flow and use the term ‘mutating’ as an antidote to the assertion that flow is necessarily positive.

Mutating

We distinguish between two fantasies of the posthuman that are at work in the cultural imaginary. The term ‘mutating’ is used to describe an aspect of the posthuman different from that of morphing. These images are also concerned with the nexus of the primitive, technology and horror, and also undergo transformation, but they depict the visceral, painful and embodied experience that results from ontological boundary clashes. We can see that mutation conveys the other side of the posthuman utopian imagination by hinting at the pain and difficulty of the flesh in becoming its ontological Other. Some critical theorists argue that technological imagery is ideologically utopian – portraying a simple and painless ascent into a silicon existence that ignores the embodied realities of the subject (Gabilondo, 2002; Gromala, 1996; Balsamo, 1995). We introduce here the distinction between *morphing* and *mutating* in order to highlight a morphing into other

entities that is seamless and effortless, but also a *mutating* into otherness. Instead of drawing attention to the ability of technology to move effortlessly between ontologies, mutation is a concept which ‘stops the flow’⁹ or presents the difficulty involved in considering flow as pure liberatory experience. The posthuman is a double-edged sword. On the one hand it mobilises a sense of co-extensive, systemic flow between and through human and nonhuman. This is an ethical imperative, because it considers other perspectives that are not ‘purely human’ or ‘purely animal’ or ‘purely machine’, producing new modalities of existence. But it does not pay attention to other possible conundrums that a sensibility of flow might bring about. Two possible conundrums are the importance and place of inertia, and the pain of flow. Here we will discuss the pain of flow. (See Campbell et al., forthcoming, on the logic of inertia.)

As the name suggests, Nike *Mutant Foot* is concerned with the trope of mutation. The advertisement depicts a runner in a dark, undefined environment which is afloat with ‘micro-organic particles’. Its foot is a monstrous hybrid of what seems to be a fowl, a human foot and a high-tech running shoe. The small toes have merged, and some of the worn toenails are missing. The big toe protrudes and it is heavily calloused (Image 7). The skin is stretched over bright blue veins that bulge and protrude all over the front of the foot, and a black material is enmeshed along the midfoot. The entire sole and the sides of the feet are serrated. The foot is an exemplary embodiment of the primitive, technology and horror.

We could say that this future foot reminds us of a *chimera*, a term biotechnological discourse uses to refer to the evolution of elements that do not belong together. But the term has a much older history in Greek mythology as a savage beast that was part lion, part goat and part snake – a ‘triple hybridity’ that evokes the defiance of the ‘natural order’. Biotechnological discourse still uses the term ‘mutant’ or ‘chimera’ to refer to genes that threaten to exceed a conceptual boundary of what is ‘normal’ or ‘benign’. Unlike the other fantasies of flow, the mutant foot evokes a worn and laboured transition from human to posthuman which leaves behind traces of pain, but also a strong connotation that an entity has defied the ‘natural order’, and has suffered for it. The image of the ‘foot of the future’ contains within it the supplement of its embodied, visceral, human existence, a potent reminder of the human within the posthuman

Primal technology

In this next section we show how a conflation of the primitive, technology and horror contradicts the humanist logic of technology as a (i) modern, (ii) progressive, (iii) clean (iv) nonalive force.

A commonly held and seldom interrogated notion about technology is that it is an instrument which accords the human with a gradual ascent towards increasing civilisation, linear progress and power over her or his environment. But looking at contemporary images which coalesce the tropes of the primitive, technology and horror

9 In conversation with Dr. Cairíona Leahy, Department of Germanic Studies, Trinity College, Dublin, whose forthcoming book takes difficulty as its central concept.

can offer alternative versions of this humanist legacy. It can work to encourage a seemingly paradoxical scene of technology as a primal, instinctual force. We could call this aesthetic *primal technology*. The images we consider in this section can be subdivided. Two aesthetic types of primal technology – ‘dirty technology’, and ‘technological primitivism’ – offer an alternative, post-humanist understanding of technology.

Dirty technology

Looking closely at Audi *Spider*, we notice that the industrial environment is visually resonant with the strange spaceship in which the alien lifeform is found in Ridley Scott’s film trilogy *Alien* (1979). Like the spaceship Nostromo in *Alien*, the cocooned, labyrinthine formations of the spider’s lair seem to be made of a combination of inorganic and organic material (see Creed, 1998).

One of the most striking similarities between *Alien* and *Spider* is that in both, we gaze on a contradictory vision of technology as *dirty*. What can we infer from such an aesthetic? In the contemporary western world, we intuitively imagine that the further technology advances, the ‘cleaner’ it becomes. Futuristic scenes of high-technology are often depicted with spotless, laboratory-like minimalist functionality, as in the hibernation/beds in *2001: A Space Odyssey* (1968) or the cryotube beds of the astronauts on board the *Nostromo* in *Alien* (1979). In contrast, the alien’s technology in *Alien* is superior to that of the human’s, despite the fact that (or, more accurately, because) it possesses an uncanny, abject viscerality, exemplified in the discovery of the alien’s egg-filled, dark and matted lair.. Similarly, *Spider* depicts a lair swathed in a thick, cobweb-like substance. Together with the dark dampness of the scene, a subterranean, visceral technology is evoked that is more powerful than the man-made car.

Dirty technology works by implying that technology is not a sterile, inanimate instrument that the human has mastery over. Rather, the dirt and dampness of dirty technology suggest an animate, sweating, breathing life-force – a concept which disrupts our normative, humanistically-inherited and instrumental perspective of technology by forcing us to consider *technology as life*. Dirty technology is an aesthetic which combines the sterile, pristine and inorganic efficiency of technology with the visceral, leaking decaying disorganisation of animal life. This induces horror because it shows technology covered in its own dirt, which implies life, which in turn implies disorganisation, which implies a disintegration of borders between ‘us’ (bounded) and ‘them’ (unbounded), which implies loss of control. Because this technology is soiled, damp and leaking, it disrupts our linear perspective of technology as an inherently progressive phenomenon. Audi *Spider* is effective in inducing horror because the damp, dark and leaking space containing the moulding cocoons of the spider and the clean, cold, untouched technological artefact are one and the same – it seems that the motivations, goals or logic of this life form cannot be recovered within the economy of the human.

Technological primitivism

Technological primitivism is concerned with the ways in which ‘primitive’ icons are used in discourses of high-technology. Combining images of the primitive with high-technology creates undecidability in meaning as the technological merges into the mythological, and the ancient merges with the modern. We use the term ‘technological primitivism’ to refer to the aesthetic that technology produces in fusing the ancient (often in the portrayal of a symbolically resonant ancient life-source) with the high-tech (often in the form of a ‘technical’ life-source). Such a logic is exemplified in David Cronenberg’s science-fiction horror *eXistenZ* (1999), where technological hardware and software for computer games have been replaced with biotechnology – the pod is plugged into the base of the spine using an umbilical-cord ‘bioport’. The games console (the ‘pod’) is envisioned as a high-tech-primitive blend of ‘amphibian eggs’ and ‘synthetic DNA’.

The most obvious indicator of technological primitivism in Audi *Spider* is the spider itself, which is an index of the logic of technoculture. The spider links the world of the primitive with high-technology – not just in its metamorphosis into automobile, but in its multiple and contradictory genealogy. The spider is a recurring symbol of primitive thought, one that reappears in fairy tales, surrealist painting and psychoanalytical theory. Freud, for example, argued that the sight of the spider can induce a crisis of neurotic anxiety. This is evidenced in the nursery rhyme of Miss Muffet or in the labyrinths of modern life (Campbell, 2000: 73). Campbell (2000), citing Freud, argues that this fear comes from an unconscious association of the spider with the image of the phallic mother and the web, the spiral web, which threatens to engulf us, swallowing us whole into her. A similar argument has been used to describe the alien in Ridley Scott’s trilogy as a technologised embodiment of the phallic mother, initiating a salient set of analogies between technology and the concept of the monstrous feminine (Bundtzen, 2000; Constable, 1999; Creed, 1998).

Although this is the most recognisable symbology of the spider, it is not the only one. Two centuries ago, poisonous spiders were not regarded only with fear, but were also considered the technical forefront of medicine, used for the treatment of smallpox, plague and fever (Cloudsley-Thompson, 1987). The mythology of Arachne¹⁰ connects the spider to the ancient activity of weaving, but also connects the primitive to high-technology. The computer emerges out of the history of weaving; the first computers were based on the logic of the loom, which so often was said to be the quintessence of women’s work (Plant, 1995; Babbage, 1864), and from which the high-technology metaphors of the World Wide Web and the matrix¹¹ emanate. In fact, contemporary technoculture is an era of *insectophilia*, or a love of insects and arachnids; spiders, ants,

10 In Greek mythology, Arachne, a young woman, was so skilful at weaving that she was rash enough to challenge the goddess Athene to a contest. She was transformed into a spider and was doomed to weave forever.

11 And each of these words in turn contains folds of meaning that demonstrate the primitive and high-tech collapse. The word ‘matrix’ for example comes from the Latin *mater*, meaning womb (Lupton, 1995). The matrix is a undecidable term in technoculture, possessing the potential to nurture and to trap (as in the recent film trilogy *The Matrix* 1999, 2003, 2003, where the Matrix is a massive computer simulation which uses humans as raw bio-material).

and bees appear with regularity in images of high-technology, enlisted because they embody the logic of high-technology which values decentredness, microprocessing and swarm intelligence. Bees, ants, spiders and worms provide ways of conceiving life in a posthuman era. Colonies, swarms and teams create metaphors to understand decentredness, rhizomaticity, distribution and microprocessing. This view has also appeared in social theory, where insects of all kinds become tropes for existence in a technocultural world. The insect acts as a metaphor and an epistemology (for example in Brooks, 2002; 1991; 1989), as well as an ontology (Deleuze and Guattari, 2004; DeLanda, 1997: 267–8; Shaviro, 1995; Haraway, 1995b) which in turn informs an insect aesthetic (Stelarc, 2006; Parikka, 2005). Audi *Spider* collapses the ancient into the high-tech, reflecting attempts in the cultural imagination to understand technology as a force in a longer line of forces and fantasies. It is also overdetermined, as its signifiers connote long histories of mythical, technological and political dramas that contradict, disrupt and confirm the dominant narrative.

Proto-atavism

In this section, the progressivist nature of humanist technology is questioned. Atavism is a concept that refers to how supposedly primitive evolutionary traits which had disappeared generations ago reappear in contemporary human or animal life. It has been used as a biological and political discourse to account for ‘other’ people who exhibit evolutionary traits of a former time but still exist in the present. Reversing this concept, we could argue that the images which conflate the primitive, technology and horror present a ‘proto-atavism’, in that they exhibit *future* evolutionary traits in the present. This concept undermines the humanist ideal of the human approaching a state of teleological perfection through an orderly ascent of increasing complexity and sophistication, as the tropes of dirty technology and technological primitivism also demonstrate. Proto-atavism functions as a way of collapsing the quality of linear time. As such, it presents technological progress as *nonlinear*, punctuated and multiple. In this way, proto-atavism contains a strong echo of Manuel de Landa’s conception of nonlinear history:

much as a given chemical compound (water, for example) may exist in several distinct states (solid, liquid, or gas) and may switch from a stable state to stable state at critical points in the intensity of a temperature (called phase transitions), so a human society may be seen as a ‘material’ capable of undergoing these changes of state... if the different ‘stages’ of human history were indeed brought about by phase transitions, then they are not ‘stages’ at all – that is, progressive developmental steps, each better than the previous one, and indeed leaving the previous one behind. On the contrary, much as water’s solid, liquid, and gas phases may coexist, so each new human phase simply added itself to the other ones, coexisting and interacting with them without leaving them in the past. (DeLanda, 1997: 16-17)

But by exhibiting atavistic traits of the evolutionary past and future, such figures confuse the linear progress of evolution, and instead argue that past, present and future are humanist responses to disorder. In a posthuman imaginary, all three ‘stages’ coexist. Proto-atavism is the argument that multiple paradigms of life exist on the peripheries of humanist life. Ancient and future evolutionary traits exist in the *present* – both in the aesthetic imagination and in everyday life. This has one important consequence; it shows us how (human) life may not be a singular progression but a cacophony of co-

existing, interacting states of past, present *and* future existences with no recourse to a single, reassuring Origin.

One visual convention of this kind of thinking of multiple life states is found in images which make it difficult to trace their lineage. Toffoletti (2004; 2005) reminds us that the image-saturated world often constructs visual representations which are ambivalent, which often do not have a signifier in an external 'real' world. These images exist – in Baudrillard's rhetoric – as a *simulation*; an object that is a copy of something which does not 'exist' (Baudrillard, 1994). Toffoletti's analysis of artist Patricia Puccini's *Protein Lattice* (Image 10) argues for visual readings which produce 'potentialities, possibilities or processes beyond a dichotomy of what is real and what is illusion' (Toffoletti, 2003:2). The images we see in the nexus of the primitive, technology and horror are those which 'suffer' from origin horror; they refuse the secure telos of an Origin which can link back to a primary source of either technology or organicism (see Wills, 2009). Nike's *Mutant Foot* suffers from origin horror. And in turn it horrifies, firstly because it does not have an analogous representative in our contemporary world, but more importantly, we cannot trace it back to an originary, ideal category of existence, in organism or in technology. Such images exceed the bounds of description.



Image 10 Patricia Puccini *Protein Lattice* (1997), Toffoletti, 2005

Conclusion: A posthuman biology

Biology as the science of life and the study of living organisms has been extremely influential in deciding the borders of existence – where life begins and ends. By way of summarising the concepts that were introduced in this article, we could think about a

seemingly paradoxical concept – a posthuman biology – as a potential theory that focuses on alternative ways to think about life at a time when technology is creating new paradigms of life, as well as investigating and revising long-established assumptions about humanist life. Shaviro (1995–1997) remarks that we live in an age of technosubjectivity, where biologists such as Margulis theorise the symbiotic basis of eukaryotic cells, and Dawkins posits the existence of selfish genes and the extended phenotype. Contemporary philosophers such as Deleuze and Guattari (2004) and sociologists such as Lash (2001), as well as literary writers such as Burroughs, and film directors in the vein of Cronenberg have attempted to invent paradigms of life in the interstices of the organic and machinic. Systems theory radically subsumes human life into an all-encompassing concept of system, of which the human is merely a ‘psychic system’, where the only important unit of analysis is systems (‘human’, ‘cell’, ‘society’, ‘the law’) which share similar abilities (Luhmann, 1995; Maturana and Varela, 1980). Hard science and science-fiction both become legitimate sites to explore ideas about life that contravene the taken-for-granted dichotomous notions of singularity and plurality, natural and technical, bounded and dispersed. These formulations abound in contemporary western bio-fiction, from astrologist Sagan’s (1992) notion of a ‘metametazoa’ – a multiple creature afloat in the ‘onmisexuality’ of bacterial exchange, to Octavia Butler’s acclaimed science fiction trilogy *Xenogenesis*, which imagines posthuman, polysexual interspecies reproduction, which she calls xenogenesis. In *The Promises of Monsters: A Regenerative Politics for Inappropriate/d Others* (1995), Haraway calls for ‘the generation of novel forms – [which] need not be imagined in the stodgy bipolar terms of hominids’, and terms this vision ‘differential artifactualism’ – a diffractive, interruptive, mutative (anti-reflective), and indeed to humanist eyes, monstrous logic (Haraway, 1995a: 299, 300). Differential artifactualism makes ontological room for the idea of *naturecultures*; for those objects in the world that science has either condemned as uncanny, monstrous or exceptional, or has simply tried to tame and move as far away as possible, categorising them into essential differences because anything else was quite simply monstrous.

Such conceptions of life exist on the edges of humanist life. Thacker (2008) calls this *biophilosophy*, and talks about some of the ways life overwhelms the rigidity of humanist life. He speaks for example of ‘extrinsic life’, or the kinds of life that cannot be contained inside itself – such as the epidemic ‘which cannot be limited to the individual organism, for its very nature is to pass between organisms, and increasingly, to spread across species borders (and national boundaries)’ (Thacker, 2008). To this, he adds concepts such as ‘lifelike death’ and ‘swarm intelligence’ which seem to depict more accurately the strangeness of life in an era that is technological.

For her part, Haraway (1995b) is fascinated in how even humble entities in existence in our contemporary world fly in the face of humanist life concepts such as unity and agency. She takes as her extended example a rather humble lifeform – the *Mixotricha paradoxa* – a creature that exists in the hindgut of a South Australian termite. This lifeform is a protist – a classification of life that does not belong to the animal, plant,

fungus or bacteria kingdoms¹². She describes the amazing transgression of conventional life systems of the *Mixotricha Paradoxa*:

a mixed up, paradoxical, microscopic bit of 'hair' (*trichos*)... a nucleated microbe with five distinct kinds of internal and external prokaryotic symbionts, including two species of motile spirochetes, which live in various degrees of structural and functional integration with their host... Opportunists all, they are nested in each other's tissues in a myriad of ways that make words like competition and cooperation, or individual and collective, fall into the trash heap of pallid metaphors and bad ontology. (Haraway, 1995b: xvii-xviii)

Literary and scientific works which theorise the posthuman sometimes blend the discourses of the primitive, technology and horror to explain or explore various accounts of the posthuman condition. Posthuman biology focuses on alternative ways to think about life at a time when technology is creating new paradigms of life as well as investigating and revising long-established assumptions about humanist life. A posthuman biology is the argument that the monolith of humanist life is myopic. By thinking of the edges of our conceptions of life, we live in a time where a posthuman biology is not only an interesting suggestion, but an essentially ethical precondition of life in high-technology.

In this paper, we are interested in adding to these diverse concerns by introduction the term 'posthuman biology'. We think that images which conflate the tropes of the primitive, technology and horror are an interesting starting point. They express the state of the posthuman imagination by at once critiquing and emphasising its fundamental concerns. We introduce a number of terms to help us think through the posthuman imaginary. The first – metamorphing – relates how the background to much posthuman theory is premised on the liberatory potential of *flow*. Processes, objects and living systems are thought to be in a constant state of becoming. We critique this aspect by asserting that flow is not always a liberatory metaphor. A politics or logic of inertia is needed as an antidote to the contemporary politics of flow. This is evident in areas as diverse as the materials economy, and studies on disposal (See Campbell et al., forthcoming). Second, the concept of primal technology is introduced as a way to think differently about the predominantly humanist logic of technology that exists in the western world today. It argues that technology is not always a progressive, civilising and inanimate force. 'Primal technology' injects technology with a posthuman logic, arguing that it is a destructive-constructive, progressive-regressive, rich-poor, lively-inanimate force in the world. Finally, the concept of proto-atavism attempts to be a posthuman antidote to the humanist concept of atavism (i.e. that evolutionary traits from the past can exist in the present). By arguing that future traits can exist in the present, proto-atavism seeks out the modes of living that exist at the edges of humanist life (Thacker, 2008). A posthuman biology is the argument that the monolith of humanist life is myopic. There are ethical reasons for proposing so. It is through observing the high-tech (cellular automata, genome) and ancient (*Mixotricha Paradoxa*) and fundamentally posthuman ways of being in the world that humans will acknowledge their place in it.

12 Algae, slime moulds, amoebae and ciliates are all protists, which Haraway says 'constitute a kingdom of their own dubious morphology' (Haraway, 1995b: xviii).

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- Nissan *Pathfinder* (TWBA, Paris, 2006)
- BBC *Digital Faces* (Duckworth, Finn, Grubb and Waters, London, 2005)
- Nike *Mutant Foot* (Publicis Mojo, Melbourne, 2005)
- CTRL, *Microvert* (CTRL, New York, 2006)

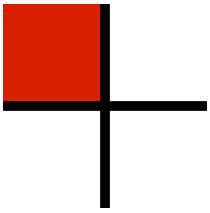
Film:

- 2001: A Space Odyssey* (1968) dir. S. Kubrick, Metro-Goldwyn-Meyer.
- Alien* (1979) dir. R. Scott, Brandywine Productions Ltd/ 20th Century Fox.
- eXistenZ* (1999) dir. D. Cronenberg, Alliance Atlantis.
- I Am Legend* (2007) dir. F. Lawrence, Warner Bros.
- Johnny Mnemonic* (1995) dir. R. Longo, Sony Pictures.
- Terminator II : Judgement Day* (1991) dir. J. Cameron, Carolco Pictures.
- The Island of Dr. Moreau* (1996) dir. J. Frankenheimer, New Line Cinema.
- The Matrix* (1999, 2003, 2003) dir. A and L. Wachowski, Warner Bros.

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Reinventing biological life, reinventing ‘the human’*

Elizabeth R. Johnson

abstract

The techno-scientific framework known as biomimicry ‘reverse-engineers’ animal life to develop technologies and tactics that solve social and environmental problems. Its advocates have promised that it will spark a technological, environmental, and even social revolution. By viewing nature as a ‘mentor’ rather than a resource to be extracted, members of the biomimetic movement have also suggested that its practice will also overturn notions of human exceptionalism. This paper explores biomimicry’s ‘revolutionary’ potential by analyzing the work of advocates and supporters of biomimicry in the context of posthuman theory. It further places this potential in conversation with the broader economic conditions of biomimetic production. It ultimately asks how, in spite of its promises, biomimetic productions have thus far only managed to reinvent and reinforce current circuits of economic and geopolitical power. In conclusion, the paper works toward highlighting – and embracing – the ambivalence of both biomimicry and so-called post-humanism as the first step in developing a politics adequate to new forms of technological and biological production.

There is a promising *autre-mondialisation* to be learned in retying some of the knots of ordinary multispecies living on earth. (Haraway, 2008: 3)

1. Consider the RoboLobster

As biomimeticist Michael Roggero tells it, living creatures are continually emitting low-level auras of chemical compounds, ‘donating’ small portions of themselves – ourselves – to the environmental media that surrounds them. On land, such chemical effluents are released into the air and deposited on our material surroundings. Underwater, they create a plume that fans out from living things in a distance and direction governed by the velocity of the current.

* I owe a debt of thanks to Morgan Adamson, Bruce Braun, Gregory Donovan, Tina Harris, Ervin Kosta, and two anonymous reviewers for their comments and suggestions on earlier drafts. Any shortcomings that remain, however, are of course my own. Funding for this research was supported by the Consortium on Law and Values in Health, Environment, and the Life Sciences at the University of Minnesota.

Lobsters, if you can take a moment and picture them, have two pair of antennae. Biologists consider the first and longer pair mechano-receptive: it relays information about the animal's material environment. The smaller pair is considered chemo-receptive, serving as the lobster's olfactory organ. Together, these two pair of bilaterally symmetrical antennae enable the lobster to map and track chemical plumes with considerable accuracy.¹

A human body, of course, lacks such a talent. Yet the presence of certain underwater chemical trails is associated with threats to human life as well as environmental, economic, or political stability. Oil spills, toxic effluents, chemical leaks, and underwater mines, for example, have persuaded certain humans – namely those engaged with managing threats to political and human security – to covet the chemical-tracking capacities of the lobster. Such envy has inspired imitation.

Roggero is primarily a behavioral biologist. But he is also a computer programmer and something of an engineer. Along with neuroethologist Maurice Evens and others who have been involved with such research, Roggero has conducted extensive research into the behavior and neuroethology of lobster life. Using video recordings and analytic software, scientists have tracked and quantified lobster movement on treadmills, in channels of moving water, or in large tanks that simulate marine condition. They have implanted hair-thin electrodes in their thoracic ganglia, their sub-thoracic ganglia and on down at each of the nodes of the lobster's neural network to generate readings of the electric impulses that power and coordinate its movement.

What has been gained from this research is a working body of knowledge that has generated working bodies – robots that behave like lobsters. But these robot lobsters also offer much more: within the field of neuroscience, working models of the lobster's inner life – far more simple than that of a human – serve as building blocks toward understanding more complex organisms and processes. Within the field of robotics, the lobster represents a body that can do things never before engineered, using frameworks more robust and 'lifelike' than those developed by traditional robotic programming. Beyond its benefits to techno-science, this process also transforms – even reinvents – how we consider the lobster. The lobsters in these laboratories have little relation to American cuisine,² to lobster breeding and feeding habits in the wild, or to their

1 For work on lobsters and lobster-mimesis, see: Beglane, Paul, Frank Grasso, Jennifer Basil, and Jelle Atema (1997) 'Far Field Chemo-orientation in the American Lobster, *Homarus americanus*: Effects of Unilateral Ablation and Lesioning of the Lateral Antennule.' *Biological Bulletin* 193: 214-215, Grasso, Frank. 2001. 'Invertebrate-Inspired Sensory-Motor Systems and Autonomous, Olfactory-Guided Exploration.' *Biological Bulletin* 200:260-168, Grasso, Frank, Thomas Consi, David Mountain, and Jelle Atema. 2000. 'Biomimetic robot lobster performs chemo-orientation in turbulence using a pair of spatially separated sensors: Progress and challenges.' *Robotics and Autonomous Systems* 30 115-131, Grasso, Frank, Jonathan Dale, Thomas Consi, David Mountain, and Jelle Atema. 1996. 'Behavior of Purely Chemotactic Robot Lobster Reveals Different Odor Dispersal Patterns in the Jet Region and the Patch Field of a Turbulent Plum'. *Biological Bulletin* 191: 312-313, Mjos, Katrin, Frank Grasso, and Jelle Atema. 1999. 'Antennule Use by the America Lobster, *Homarus americanus*, During Chemo-orientation in Three Turbulent Odor Plumes'. *Biological Bulletin* 197: 249-250.

2 Biomimetic robots themselves reveal little about American cuisine, but neuroethologist and biomimeticist, Joseph Ayers, does reveal much of what he has learned throughout a career of working

population growth in comparison to rates at which humans consume them. These lobsters open no new windows onto ocean ecology nor do they reveal the 'secrets' of marine life.³ They do, however, shed light on novel arrangements of humans, animals, and technology by linking biological knowledge directly to social and political problems in new ways. They also draw attention to a host of other projects hoping to bestow upon us the physiological and behavioral capacities of these (and other) animals. Research into lobster life only scratches the surface of an emerging techno-scientific framework that has come to be known as 'biomimicry': stigmergy navigation in ants and geese, gecko adhesion, bat sonar, squirrel hibernation, spider and fly vision, lizard limb regeneration, chemo-sensing in moths, the creation of spider web materials, flexibility and strength in octopus and squid arms are all part of a diverse field of objectives, methods, and tactics for making biology relevant to technological development and for harnessing the observed physiological and neurological architectures of nonhuman life to solve material problems that span species and spaces.

2. Life out of joint

This is not animism, any more than it is mechanism; rather, it is universal machinism. (Deleuze and Guattari, 1988: 283)

Biomimetic innovation is built on the detailed study of 'existence proofs' exhibited in animal physiology: an animal's capacities are taken as evidence of an existing potential already designed and engineered to work in the world.⁴ It proceeds by 'reverse engineering' the observable behaviors expressed in biological life: without fully understanding an organism's 'design code', biomimeticists attempt to engineer machinic organisms or synthetic materials capable of expressing that animal's functions. An array of techniques and technologies – chemical engineering, robotic hardware, advanced computing technologies, and mathematical modeling software – are marshaled to enhance our own techno-abilities by remaking the capacities found in biological life.

Naturalists, ecologists, and evolutionary biologists historically presented an understanding of lobsters in relation to their 'natural' marine habitat, in connection to the organisms and the nonliving systems in which they live and to which they are related. In zoology textbooks, lobsters are situated next to their kin: pages on shrimp, crayfish, and other crustaceans surround those on the lobster (see, for example, Castro and Huber, 2005). Natural historians and ecologists place primacy on how lobster

with (and eating) the crustacean subjects of his research in his cookbook, *Dr. Ayers Cooks with Cognac*. Dr. Ayers has also contributed to debates around the question of ethics in relation to the boiling of live lobsters.

3 See Trevor Corson's *The Secret Life of Lobsters* (2004), in which lobster biomimicry is strongly derided.

4 There are two purposes of biomimetic robotic design: The first uses the construction of biomimetic robots for hypothesis testing – it is presumed that if the robot behaves as the organism modeled does, the knowledge gained is an accurate representative model. The second use of biomimetic technologies is task-based: biology is mimicked so that a particular task to which the animal is suited can be performed. For further clarification, see Blazis and Grasso (2001).

bodies emerged within an historical trajectory or how they relate to other bodies within a bounded ecological assemblage. Biomimicry, on the other hand, is unconcerned with the 'place' or the 'natural' order of the organism's evolutionary development. Indeed, as a practice, it expresses little interest in where, when, and how lobsters emerged or in the crabs, clams, and shrimp related to them by networks of kinship or consumption. Instead, biomimetic scientists investigate lobster bodies for what they can do: how they orient themselves to the world and how such orientations are different from our own. Rather than being concerned with classification, biomimeticists attend to the animal's potential to connect with other forms of life, technologies, and social problems, valuing lobsters for their capacity to move with agility and track chemicals underwater.

Biomimicry's transformative potential is seductive; it is easy to fixate on how and where biomimetics shifts our conceptions of 'life'. One may be (as I was) drawn to the ways in which biomimicry is Spinozan or Deleuzian in its attention to embodied capacities and its drive to appropriate them in bodies elsewhere. Machines that become lobsters or lobsters that become machines are not, as they say, associated by 'mere metaphor'. These animals, their traits, and the products developed with knowledge of them are not valorized on account of animal symbolisms or the meanings attributed to their animality (as in Nicole Shukin's work). Rather, these animals become valued because of their functionality, efficiency, and 'natural' talents. Biomimicry breaks down bodies the barriers: animal and machine become indistinguishable as the capacities of one are substituted for another. A lobster on a treadmill is a lobster defined by its 'intensive' functions – what its neuroethology can do and how it does it. Indeed, the animals that inspire biomimetic design may be best understood as 'composition[s] of speeds and affects on the plane of consistency: a plan(e), a program, or rather a diagram, a problem, a question-machine' (Deleuze and Guattari, 1988: 258). This biological apparatus thus can be read as a set of 'intensive parts': powerful and embodied capacities for action that are transferable from one body to another to solve any barrier to movement as the need – or question – arises. Read in this way, biomimetic practices are perhaps less 'post-human' than post-animal or post-species altogether.⁵

Supporters of the so-called biomimetic movement have billed it a 'revolution' in technoscientific innovation. But what kind of revolution is this? What are we to make of these rearrangements of biology and technology? Do lobsters and their robotic counterparts merely offer a vivid illustration of Deleuze and Guattari's machinic assemblage of bodies and relations of moving parts? Or is there something more potent – politically, ethically, socially – to be expected from biomimicry's techno-biologies? Advocates of biomimicry would have us think as much. So too would much of the existing literature in 'post-humanism' and animal studies.

5 I agree with Haraway's contention that Deleuze and Guattari 'don't give a flying damn about animals', at least not as such, even in their chapter on 'Becoming Animal' (Gane and Haraway, 2006: 143). While animal life may be merely used as a foil for their anti-oedipal project, Deleuze and Guattari's dedication to unnerving human exceptionalism and associated subject positions in favor of 'machinic assemblages' and relational 'becomings' does take us 'beyond the human', if not in the direction that Haraway herself would like to move.

Historical traditions founded on a purified category of 'the human' absorb the blame for many of the problems characteristic of our contemporary global situation. Giorgio Agamben's figuration of 'bare life' encapsulates this argument in what are perhaps the starkest of terms. A life is rendered 'bare' when it subject to exclusion from the protections provided by law or social securities: the taking or neglect of 'bare life' requires no accountability. Agamben argues that such a state is predicated on the philosophical distinction between human and animal, a distinction that allows for the subsequent attribution of 'animal' qualities to the lives of humans. As inferior to but resident within 'the human', category of 'the animal' legitimizes the labeling of populations as 'unfit' for life in the polis, be they excluded on the basis of race, religion ethnicity, gender, class, or geographical origins (Agamben, 2004). In *The Open*, Agamben explores the history of science and philosophy that articulates this process of categorization as a legitimation of exclusion. He names this process the 'anthropological machine'. Following this logic, Kelly Oliver notes that the human and animal, distinguished as such, serve as the founding concepts that ground acts of injustice and cruelty to humans as well all other species: 'the anthropological machine... produces the monstrous category "animal" that not only effaces nearly infinite differences between species but also corrals them all into the same abject and inferior pen' (Oliver, 2007: 11).

Similarly, but from within a more materialist tradition, Donna Haraway's *Cyborg Manifesto* catalyzed a conversation that has located the negative qualities of science and politics in the 'Western' tradition – 'racist, male-dominant capitalism; the tradition of progress; the tradition of the appropriation of nature as resource for the productions of culture; the tradition of reproduction of the self from the reflections of the other' – within origin myths of purity and the maintenance of a 'border war' a between organisms and machines as well as humans and animals (Haraway, 1991: 150).

The appointed 'guru' of the biomimetic movement and recent recipient of the UN's 'Champion of the Earth' award in Science and Innovation, Janine Benyus, has composed a narrative of the our ecological crisis and its associated injustices that resonates with both Agamben and Haraway's work. She locates our collective crisis on Earth in the 'severed' connection between humans and the Earth. As in Agamben's narrative, this loss of connection is the result of an originary rupture, located in this instance with the agricultural revolution. We have lost, she laments, 'cooking fires to storytell around [and] ceremonial dances to reenact the movement of the herds' (Benyus, 1997: 183). But, for Benyus, historical progress has been one of a continual series of such ruptures, each inaugurated by technological development, and each leading humans further from what Benyus refers to as 'our home'. The following is her version of the historical narrative:

Our journey began ten thousand years ago with the Agricultural Revolution, when we broke free from the vicissitudes of hunting and gathering and learned to stock our own pantries. It accelerated with the Scientific Revolution, when we learned, in Francis Bacon's words, to 'torture nature for her secrets.' Finally when the afterburners of the Industrial Revolution kicked in, machines replaced muscles and we learned to rock the world. But these revolutions were only a warm-up for our real break from Earthly orbit – the Petro-chemical and Genetic Engineering Revolutions. Now that we can synthesize what we need and arrange the genetic alphabet to our liking, we have gained what we think of as autonomy. Strapped to our juggernaut of technology, we fancy ourselves as gods, very far from home indeed. (ibid)

Benyus's history of our collective loss of connection to the earth is a story of compounding catastrophe that calls to mind Walter Benjamin's *Angelus Novus*, who 'sees one single catastrophe, which keeps piling wreckage upon wreckage and hurls it at his feet' (Benjamin, 1996: 392).

3. Remaking life, remaking the human

Life creates the conditions conducive to life. (Benyus, 2002)

For Benyus as for Agamben, salvaging a saner life from the wreckage of history seems to require somehow absolving ourselves of 'original' catastrophe by rearticulating the human (and animal) differently. Indeed, like all of the aforementioned theorists, Benyus calls for dismantling conceptions of human exceptionalism that seems to have become increasingly sedimented throughout history as the 'wreckage' is piled higher and higher. For Agamben – as well as Kelly Oliver and Cary Wolfe – this requires the destabilization or even erasure of the categories of human and animal through the recognition of shared limits, vulnerability, or an embrace of Derrida's 'nonpower at the heart of power'. Haraway, along with Bruno Latour, Michel Serres, Sarah Whatmore, and Jane Bennett, attempts to rework the 'human' in practice, by writing of bodies-in-relation – bodies that have 'never been human' in spite of the centuries of philosophical and political writings that seem to assure the contrary. These writers enliven alternative histories, citing empirical evidence of our becomings with objects, animals, and bacteria and telling stories in which 'the human' is neither the protagonist nor even an active agent. Like the work of Deleuze and Guattari, these histories are meant to transform how we envision our own life activity. Together these authors all suggest that we not only recognize and acknowledge, but also actively practice ever-changing 'strange kinships' that '[allow] for an intimate relation based on shared embodiment without denying differences between life-styles or styles of being' (Oliver, 2007: 18); we are encouraged to reproduce life as if we were accountable for the entire 'universal machine' rather than the individuals and groups (some, although not others) who we have selected out of it. For Haraway, this consists of 'retying the knots of multi-specied living on earth' (Haraway, 2008: 2) and better attending to the 'sym-bio-genesis' of all beings by recognizing that they are "the fruit of 'the co-opting of strangers, the involvement and infolding of others into ever more complex and miscegenous genome'" (Margulis and Sagen, quoted in Haraway, 2008: 31). Accordingly, such transformations in how we practice everyday life and how we imagine our own subjectivities offer the potential to enact 'autre-mondializations' – alternative global political arrangements divorced from neoliberalism and liberal humanism (Haraway, 2008).

Janine Benyus's work and that of the biomimeticists with which she is associated seem to follow through on these recommendations in practice. While less Continental philosophy than New Age, Benyus's 1997 book, *Biomimicry: Innovation Inspired by Nature*, describes a collection of projects that suture together the now existing pieces of our historical 'wreckage' with the products of biological histories. The ultimate aim is to remake how we make technologies by modeling them on biological structures and functions. Rather than blindly push forward with a vision of technological 'progress'

whose outcomes are unknown, we can look to nature to identify how it creates the conditions for life's expansion. As she explains:

Evolution itself is believed to have occurred in fits and starts, plateauing for millions of years and then leaping to a whole new level of creativity after crises... my hope is that we'll have turned this juggernaut around, and instead of fleeing the Earth, we'll be homeward bound, letting nature lead us to our landing, as the orchid leads the bee. (Benyus, 1997: 5)

This is not all, however, as according to Benyus, engineering a future that is both 'calm' and sustainable requires more than the technological fix that biomimicry promises. Rather, it also requires fixing what we broke in the Agricultural Revolution in her narrative: our connection to the earth. And this, she suggests, is the ultimate promise of biomimicry – that it will undermine the conceptions of human and nonhuman life upon which the traditions of technological production and progress were built.

Print and online news media outlets view biomimetic productions with a sense of profound irony: journalists approach the idea that scientists at elite institutions and engineers at multinational corporations are looking to 'lowly creatures' to teach them how to overcome technological and conceptual roadblocks with humor (Gaidos, 2010: 22; Stresing, 2003). Benyus, however, foregrounds the potential for biomimicry to unsettle our notions of human exceptionalism as its most profound contribution. Rejecting a human-environment relationship best characterized by extraction, exploitation, and domination, Benyus characterizes biomimicry as a means of production founded on mutual enhancement and education: it's not 'what we can *extract* from nature, but ... what we can *learn* from her' (Benyus, 1997: 2, emphasis in original). For her, biomimetic production is not about using animal life (or using it up), but about exploring it as a source of enchantment and inspiration. And, for Benyus, this is the true hope of biomimicry: that they will engender a more respectful, responsible, and humble engagement with nonhuman as well as human life.

When we view nature as a source of ideas instead of goods, the rationale for protecting wild species and their habitats becomes self-evident. To have more people realize this is my fondest hope. In the end, I think biomimicry's greatest legacy will be more than a stronger fiber or a new drug. It will be gratitude, and from this, an ardent desire to protect the genius that surrounds us. (Benyus, 2008)

By transforming how we make everything from plumbing pipes to robots, Benyus argues that biomimicry naturally stretches the categories of human and nonhuman beyond their limits, shaking the foundation of human exceptionalism and forging more collaborative engagements with nonhumans for a more democratic and sustainable future. If we accept these conclusions, such engagements not only promise to solve our ecological crisis, but also the problematic social and political conditions that have led to it. Just as biomimicry disintegrates what we know of 'lobsters', Benyus and other advocates promise that it will break apart the human, locating it *elsewhere*, outside of itself in such a way that it can no longer refer back to an essential identity or reproduce an idealized image of human nature. Read through this lens, biomimicry might suggest an end to the 'lethal and bloody' operation of the 'anthropological machine' through a re-making of production and the reconsideration of the how humans, animals, and other things come together to produce things and, subsequently, to produce the world. Its practice of transgressing traditions borders and its emphasis on inspiration over

appropriation seem to offer a foundation for modes of production that are more ethical, more attentive to and responsible for the bodies with which we produce. In Benyus's words, 'We will have to climb down from our pedestal and begin to see ourselves as simply a species among species, as one vote in a parliament of 30 million. When we accept this fact, we start to realize that what is good for the living Earth is good for us as well' (ibid).

While ambitious, I think we want to take these wagers on the future and the transformations they promise – both those of biomimicry and posthuman theory – seriously. But can either one really follow through on them? It may be that we can't know the answer to that in advance, but, perhaps more to the point, we may not be able to develop an adequate response to biomimetic production – or to understand its ethical and political implications – until we better understand the conditions of its making. Following Haraway, we might ask, 'what is the apparatus of production of these new sorts of being?' (Haraway, 2008: 157). For those desiring transformation to either 'racist, male-dominated capitalism' or an end to the 'anthropological machine' the answer may be less than promising.

4. Futures beyond I: Biomimetic capitalism

Bio-inspiration is a genuine new frontier. (Forbes, 2005: 6)

Benyus, along with a 'revolutionized' and now-humbled cadre of biomimetic designers, has very little to say about the politics of production in writing or in her lectures. Yet her work reveals much about political economies. In conjunction with her sustainability narrative and urgent call for the overturning of human exceptionalism, Benyus and other advocates of biomimicry celebrate its potential as a working framework for 'greening' – and profiting – industrial capitalism. Benyus's consulting firm, the Biomimicry Guild (she is both its principal founder and 'innovation consultant'), seeks to link together industrial and commercial manufacturers with biological knowledge to create more sustainable and solidly-engineered products and practices. They refer to themselves as 'nature's translators'. The service they provide to enterprises and industries offers '∞ possibilities for innovation and sustainability'. Their website explains:

For centuries, biologists have been in labs and fields taking notes on the adaptive strategies life has developed. Unfortunately, much of this information is inaccessible, locked up in technical, scientific papers written for other biologists, and rarely organized by engineering or design function.

The Biomimicry Guild has proven methods and experience in accessing [biological] information. We have a staff of biologists, known as BaDTs (Biologists at the Design Table), who excel at searching through biological research to find the natural strategies that meet your company's challenges, and then assessing which of those designs, chemical recipes, or system strategies are most promising for your needs. Our staff is also adept at taking complex and technical biological data and translating it into language digestible by any business department, from marketing to R&D. (Biomimicry Guild, 2010)

The Guild has been seemingly successful in selling its consulting services and its BaDTs have delivered on providing innovative ideas that cut costs, boost efficiency, and heighten sustainability. Their client list boasts an impressively diverse array of over 140 companies and institutions. A selection of these includes colleges and universities (including Stanford, Ishida University, UNC-Chapel Hill, Oberlin College), environmental and sustainability nonprofits (Sierra Club, the Land Institute, Rocky Mountain Institute, UK-based Forum for the Future, Bioneers), ecofriendly product corporations (Seventh Generation, Patagonia), states and state institutions (State of Montana, NASA, the EPA, US Fish and Wildlife Service, Washington State Department of Ecology), architecture and design firms (HOK Architects, American Society of Interior Designers, David Oakey Designs, Design Futures Council) as well as multi-national corporations (Dupont, Coca-Cola, the Dial Corporation, Boeing, Hewlett-Packard, General Electric, Nike, and Proctor and Gamble). Participation by companies and institutions in the biomimicry movement is meant to 'revolutionize' the products and services of these corporations, opening up new avenues for 'sustainable innovation'. The Guild's service to clients involves workshops 'on-site' at corporate or institution headquarters or 'field excursions' to Montana, Costa Rica, Mexico, South Africa, India, or other pre-designated locales. BaDTs take their clients through a four-step process in which they (1) boil down client needs to 'functional essence', (2) 'biologized' those needs by asking 'how would nature do this?', (3) generate a compendium of biological resources that answer that question and can address the client's needs, and (4) translate those natural functions into client-specific products and processes (Biomimicry Guild, 2010). The promise of the Guild is that such methods will generate not only innovative ideas (on their website, they assure that 90% of the 'best practices' they generate will be new to clients), but also that they will be cost-effective and 'inherently life-friendly and sustainable' (ibid).

While the 'needs' that require 'biologization' are those defined by the institutions and enterprises who can afford to invest in the Guild's consultation services, the Guild's hope is that 'biologizing' those needs will render them commensurate with the needs of planet. This hope is woven into the rhetoric of their website and in their brochure material and places their practice solidly within the growing industry of consultants and corporations actively working to 'green' capitalism. And, if their own literature does not make this point obvious enough, Benyus's work on biomimetics has been cited in seminal texts advocating eco-friendly profit generation. Jonathon Porritt's *Capitalism as if the World Matters* turns to biomimicry to suggest that sustainable capitalism does not mean 'an end of the huge global companies that have become so powerful over the last 20 years', but rather that it might 'really become a genuine "force for good", as well as a continuing engine of profit generation' (Porritt, 2005: 88). The authors of *Natural Capitalism: Creating the Next Industrial Revolution* – Paul Hawken, and Amory and L. Hunter Lovins – offer a similar perspective. They share Janine Benyus's views of both industrial history and potential futures of sustainable living and, like Benyus, present a vision of contemporary society at a crossroads: one path leads toward ecological (and subsequently social) crisis and another ends in a utopian scenario fueled by biomimetic innovation.⁶ This utopia is one characterized by both ecological stability and economic

6 Also like Janine Benyus, Paul Hawken and Amory Lovins work with and in industry as consultants and, in Hawken's case, as an engineer and entrepreneur. Hawken founded Highwater Research, a

expansion. Producing it, according to Hawken *et al.*, entails a revaluation of natural resource wealth *as* natural capital. For them, an incorporation of the externalities that so often are either ignored or stolen (through environmental degradation or the production of waste and general resource exploitation) into the market is necessary to promote 'responsible stewardship and prosperity'. This includes the promotion of biomimetic design and the creation of 'closed cycle' systems of production and waste (tying biomimicry to Walter Stahel's 'cradle to cradle' model of production developed two decades prior⁷) (Hawken *et al.*, 1999: 10).

Emulating the way in which nature makes things work – and makes them work efficiently – not only produces more sustainable systems of production, but also opens up exciting new 'frontiers' for innovation. Peter Forbes's book, *The Gecko's Foot*, explores the discovery of this 'new frontier': advances in biological science and microscopy better equip scientists to reveal the 'secrets' of how organisms function. Biomimetic production for Forbes – he refers to it as 'bioinspired' – can be geared as easily to generating sustainable profits as it can be toward producing sustainable ecosystems. His book showcases a series of commodities that scientists and their collaborators in industry have brought or are hoping to bring to the market, including paints, glass, and 'stone' products that are 'self cleaning' as a result of a structural composition on the molecular level that mimics the surface of a lotus leaf; Gecko Tape that adheres to dry and aqueous surfaces using Van-der-Waals forces at the nanoparticle scale as gecko feet do; and protective armor made of spider silk (Forbes, 2006). By offering more efficient models for production as well as potentially cheaper production materials, 'nature' is touted as an effective way to keep profit margins viable in a tight economy, particularly as industry is coerced by a public increasingly concerned with 'nature's limits'. As Robert Ackerman has suggested, the nonhuman environment may just be the 'ultimate free market for selecting effective structures' for technological development and engineering (Ackerman, 2000).

More than opening up new frontiers for technological production, the turn toward biomimicry may also be opening up a new category of workers. The Biomimicry Guild's BaDTs, for example, do the work of translation between the nonhuman world (or the biologists who produce knowledge about it) and engineers, service providers and designers who seek to produce from it. Beyond this, the San Diego Zoo has recently begun a program in which they hope to serve as the repository of biological inspiration: with one of the largest and most diverse collections of flora and fauna in the world, the

Socially Responsible Investing Research Firm; he is the CEO of PaxIT and PaxFan, subsidiaries of Pax Scientifica, an engineering firm that develops bioinspired cooling technologies; and he is the founder and Executive Director of the Natural Capital Institute, which runs the 'Wiser Earth' program, a social and professional networking tool that connects people and projects dedicated to environmental and social justice. Amory Lovins is Cofounder, chairman, and chief scientific officer of the Rocky Mountain Institute (RMI), a nonprofit dedicated to conserving natural resources through promoting efficient energy use. RMI works 'extensively with the private sector, as well as with civil society and government, to create abundance by design and to apply the framework of natural capitalism' (www.rmi.org).

7 For the original citation, see Stahel (1984). However, William McDonough and Michael Braungart's book, *Cradle to cradle: Remaking the way we make things*, served to define and publicize the movement, of which biomimicry is now an integral part.

zoo offers a 'multidisciplinary set of scientific and behavioral expertise and world-class facilities [that] can help you unlock nature's secrets and solve real-world problems with answers that have already been developed in nature' (San Diego Zoo, 2010).

While the narrative of ecological salvation remains very much in play in these contexts, advocates of the bio-inspired enhancement of industrial production has most often emphasized sustaining or expanding capitalism over sustaining or better serving human and nonhuman life-as-such. Beneath the rhetoric, advocating for green capital seems less about transforming our modes of production than intensifying them. The Biomimicry Guild itself promises a revolution in the forms of production. What it really seems to advertise to potential clients, however, is not greater sustainability, but rather endless possibilities for solving barriers to production: 'Whatever your company's design challenge, the odds are high that one or more of the world's 30 million creatures has not only faced the same challenge, but has evolved effective strategies to solve it' (Biomimicry Guild, 2010). Delivering on these promises may do more to expand capitalism's reach into the 'new frontiers' of environmental conservation and biological life – making all of 'the world's 30 million creatures' measurable and managed within the logic of capital – than they do to inject biological principles or social ethics into our present modes and methods of production. This seems to simply pervert Haraway's aims as well as those of Benyus: instead of rendering us accountable for the world – for all of the natural resources to which we are indebted – it only renders those resources quantifiable within the metrics of capitalism. As such, Benyus's hopes of transforming the relationship between human and nonhuman life lose their grounding. Rather than transforming nature into a 'mentor, a source of ideas and wisdom', its present status as a 'warehouse' seems likely to persist – only the potentials of its use have been expanded.

5. Futures beyond II: Military biomimetics

In addition to its cultivation within circuits of green capitalism, biomimicry has also been understood as an efficient way of altering the field of national security and battlefield combat. Social and technological transformations throughout the latter half of the twentieth century provoked a paradigm shift in national defense interests that came to be known as the latest US 'Revolution in Military Affairs' (RMA). In the late 1990s, the rise of asymmetrical warfare, non-state conflicts, guerrilla tactics, urban battlegrounds, rapid technological change, and environmental insecurities threatened to render conventional military doctrine (not to mention our 'social fabric') obsolete (Kaplan 1994, see also: Mazarr, 1994; Atta, *et al.* 2003; Bernstein, 1989; Jablonsky, 1994). As a result, the Department of Defense (DoD) has increasingly woven the promise of advanced technologies into a narrative of military crisis and technological salvation. As Michael Mazarr's text on the early days of the RMA narrates, '[a] powerful combination of social, technological, and political developments is revising the role of military force in national policy and changing the way wars are fought. In responding to this dizzying pace of change, our challenge... [is] to seize the opportunities of this new era in warfare, to make it work for us rather than against us' (Mazarr, 1994).

To achieve these goals, the most recent RMA in the US was designed primarily to advance technologies of 'surveillance, C3I [command, control, communications, and intelligence] and precision munitions [with new] operational concepts, including information warfare, continuous and rapid joint operations (faster than the adversary), and holding the entire theater at risk (i.e., no sanctuary for the enemy, even deep in his own battlespace)' (Krepinevich, 1994, quoted in Hundley, 1999: 8). But for the past 20 years, developing the technology to do this has gone beyond computers and traditional advances in machinic development and into (re)producing what bodies are and what they can do through biotechnology and, increasingly, the modeling of technological apparatuses on existing biological capacities.

Along with a smattering of projects that have developed with the support of the US Army, Air Force, and the Office of Naval Research, the Defense Advanced Research Projects Agency (DARPA), has been the heaviest supporter of research and development projects in biomimetic design. While the agency casts a wide net, DARPA has increasingly turned toward emulating such animal capabilities as a means of fulfilling its mission to 'accelerate the future into being'. While Defense-funded projects based on biomimetic principles began as early as the 1980s, biomimetic technologies for national defense began to be incorporated into research and development strategies of the different arms of the DoD around the turn of the century. In the late 1996, then head of the Defense Sciences Office at DARPA, Alan Rudolph, developed the 'Controlled Biological Systems Program' (CBSP), which involved the manipulation of biotechnologies as well as early research into biomimetic, design. Until their cancellation in 2010, the bi-annual DARPA Tech conference routinely brought together managers of defense research and development programs with scientists and developers in industry and academia to reveal and presage cutting edge biomimetic materials and technologies. DARPA Tech 1999 featured a series of conversations and discussion forums designed to strategize how to effectively bring biological research to bear on the development of defense technologies. As DARPA manager Dr. Stephen Squires put it in a talk entitled 'DARPA BioFutures', 'The challenge is to translate the emerging vision into action to begin adding the "Bio Dimension" to DARPA Futures to accelerate the process of discovery and enabling revolutions' (Squires, 1999).

Since the late 1990s, the 'bio dimension' has been heavily integrated into DARPA programs as well as other branches of the DoD. In 2000, the US Army made biomimetics a 'Strategic Research Objective' and CBSP had developed into a DARPA Defense Sciences Office (DSO) program for 'Biologically Inspired Platforms and Systems'. As the DSO explains, 'nature has evolved truly remarkable capabilities that, if properly understood, would create significant new defense capabilities. DSO's efforts focus on understanding, and then emulating, the unique locomotion and chemical, visual, and aural sensing capabilities of animals' (DARPA, 2008). Indeed, more than ecological salvation or the greening of capitalism, this narrative of biomimicry as a means toward geopolitical salvation has generated considerable scientific research as the Army, the Navy, the Airforce, and DARPA have funded collaborative research relationships around biomimetic design increasingly over the past 20 years. DARPA alone has generated a host of biomimetic projects: from the RoboLobster to gecko-inspired 'Z-Man' suits designed to enable soldiers to move vertically through urban battlespaces, the agency's three-billion-dollar research and development budget serves

as a significant funding source for biomimetics. Additionally, the Army's Institute for Collaborative Biotechnologies (to name just one example) has organized teams of over 60-university research faculty at three institutions with the goal of developing 'revolutionary technological innovations in bio-inspired materials and energy, biomolecular sensors, bio-inspired network science, and biotechnological tools' (ICB, 2005).

Within the scientific landscape of defense-driven biomimetics, its practice is not necessarily (or not at all) understood in terms of securing the future of human or ecological life as such. Indeed, the military's appropriation of biomimetic technologies has no truck with dreams of creating 'conditions conducive to life' or of dismantling notions of human exceptionalism, even when the biological sciences and biomimetic technologies are harnessed to ensure the lives of US warfighters. The DoD enrolls these practices in order to preempt emergent political threats to the present geopolitical order; they are used as a means of developing technologies that enable the 'full-spectrum dominance' of battle spaces as well as the emerging geopolitical landscape. Rather than serving life, biomimetic technologies instead serve to eliminate conditions that would allow for alternative futures – those disconnected from or in opposition to the legitimacy of US geopolitical power – to emerge into being.

6. Redirecting the narrative

After 3.8 billion years of research and development, failures are fossils, and what surrounds us is the secret to survival. (Benyus, 1997: 3)

In a recent Bioneers podcast – an online radio program with a tagline 'revolution from the heart of nature' – host Neil Harvey suggests that biomimicry will ultimately 'guide human ingenuity and our political will' (Bioneers, 2009). This too is the hope Janine Benyus as well as that of many posthuman theorists: that a reinvention of lobsters and, by extension, humans may revolutionize how we conceptualize and interact with 'life' of all forms. Benyus's narrative of human's historical progression and the biomimetic 'return-to-come' imagines a political and ethical milieu transformed by the material practices of production. The very act of making of technologies truly biomimetic, she seems to suggest, will ensure that we produce 'conditions conducive for life'. Much of the literature on posthumanism seems to lend weight to this argument. As Haraway suggests, when we 'become with' one another in new ways, we shift who and what we consider as qualified and relevant for political life. The making of productive encounters that decenter the human and place it outside of itself is said to present a ground upon which the future – future ethics, future politics – can be open. Biomimetic science seems to do exactly this by being open to biologies and biological processes that do what and go where our bodies cannot, thereby putting us in intimate conversation with both the limits of 'the human' and the vast potential of life outside it.

These promises of biomimetic technologies – that they will generate a revolution in how we live by recreating conditions conducive for life – are certainly tantalizing. However, if biomimetic practices are better suited to creating conditions conducive for capital and national defense interests, what then, if anything, is being transformed? Given the apparatuses of production that have thus far cultivated the biomimetic

movement, can we remain optimistic about the transformative political will that it engenders? As we shift our conception of nonhuman natures to understand it as 'our biggest and best R&D library' productive of 'elegant and efficient' design solutions (San Diego Zoo, 2010), do we really break from histories of anthropocentrism and resource exploitation that have been integral to geopolitics as well as industrial and post-Fordist capitalism? Or, are the biologies of biomimicry only incorporated – and inoculated – within them?

Melinda Cooper's work on the 'biologization' of the political economy in the US at the turn of the 21st Century might suggest the latter. Her work has explored the concept of 'emergence' in microbiology – descriptive of the tendency of bacteria and viruses to develop resistance in unpredictable ways – and its circulation within social movements, finance capitalism, and geopolitical strategies in the 1980s and 1990s. She reveals how biological science transformed political and economic life, but was ultimately used to advance US projects of neoliberalism and geopolitical security. In her account, narratives of 'emergence' induced the environmental movement, financial institutions, and national defense priorities to collectively adopt strategies that would guard against a myriad of catastrophes that *could* be imminent. The result was a political and economic system built around preemption. What these transformations ultimately ensured was the 'actual institutional conflation of security and public health research, military strategy, environmental politics, and the innovation economy' (Cooper, 2008: 98). Cooper contends that this conflation better allowed US government institutions and corporations (particularly under the Bush administration) to capitalize on biological and social reproduction and to 'expand the scope of legitimate security interventions' in all forms of life, domestic and foreign. Read in such a light, the robotic lobsters of the 'biomimetic revolution' fall squarely within this nexus of economic, political, and biosphere security. Although the DoD's bellicose visions of a future populated with biomimetic objects appear at odds with Janine Benyus's call to disarm conventional conceptions of human exceptionalism and regimes of production based on nature's mastery, the project of securitization – geopolitical and environmental – unites them. Indeed, despite the rhetoric, biomimicry advocacy organizations place primacy not on biomimicry's potential to transform, but to securitize, offering salvation in the form of ecological sustainability. Rather than opening up a posthumanist future, this narrative ultimately serves to reproduce an intensely conservative one of humans and animals reunited in a prelapsarian utopia.

The Biomimicry Guild's characterization of evolution is emblematic of this as they express evolutionary development as 'progress' rather than a contingent process. The nearly four billion years of life on earth has, in the Guild's rhetoric, proceeded linearly, accumulating 'wisdom' and skill along the way and achieving 'optimal' states of being. It is a discourse that invigorates thoroughly deposed interpretations of nonhuman natures and pre-human pasts as 'harmonious' and 'balanced'. As biomimetic production is made to promise a 'return' to such a state, it is charged with generating the environmental and social security required to get there. It is around this point where Benyus's vision in *Biomimicry* diverges from that of Haraway, Agamben, and other posthumanist theorists: such a future necessitates a present-day politics that operates by way of qualifying life, human and animal, to achieve its ends. And, while these narratives may displace essentialized conceptions of the animal and human, they

inadvertently revive the essentialism of nature, reinscribing the notion that nonhumans – and, by extension, their reinvention – are righteous and apolitical. Biomimetic production so conceived does not merely open new avenues for production; it imagines instead that it opens up access to the 'right ones', eliminating the potential for ecological, geopolitical, and economic contestations. The 'political will' that such a view engenders is one of acquiescence and blind acceptance of 'nature's wisdom' however it may be taken up and applied. As such, the conditions of biomimicry's production are easily sidelined, hidden behind a fascinating story of the recomposition of human and nonhuman productions.

At the end of the day, the question to be asked about biomimetics may not be whether or not it destabilizes 'the human', but rather about the ways in which its 'ever more complex and miscegenous genome[s]' (Haraway, 2008: 31) are incorporated within capitalist and geopolitical frameworks. The question that then remains is: can these practices still disrupt anthropocentric narratives of progress and securitization in order to produce futures that are not projected toward life's salvation, but toward its expansion? I would like to respond with a cautious yes, but only if we attend to what biomimicry actually teaches us: that natures – human or non, produced or reproduced – can be understood as neither 'right' nor optimal, but as radically ambivalent. If that is the case, our response to these transformations ought to be neither overly sanguine nor hopelessly fatalistic. To follow either path would be to imagine that biomimicry's processes of reinventing nature will automatically guide our political will in a direction most conducive for 'life', however that is defined. The task may instead be to develop a political will that is adequate to these new forms of production as well as the changing needs and meanings of human and nonhuman life-as-such. Such a response would first require a more militant inquiry into the contemporary social and political frameworks amid which these multi-specied encounters emerge, noting where and how they engage with the maintenance of geopolitical and biopolitical productions. It may also require a move away from questions of posthumanism or sustainability and toward what Melinda Cooper has referred to as 'creative sabotage of the future' (Cooper, 2006: 129). And what we may wish to sabotage is not only our traditional conceptions of humans and nonhumans, but also the conditions of production that presently coordinate the connections between lives on earth.

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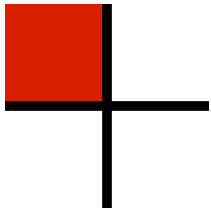
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Pirates and the uses of history

Martin Parker

review of:

Gabriel Kuhn (2010) *Life under the Jolly Roger: Reflections on golden age piracy*. Oakland, CA: PM Press. (PB: pp. 272, \$20.00, ISBN: 9781604860528)

Peter T. Leeson (2009) *The invisible hook: The hidden economics of pirates*. Princeton, NJ: Princeton University Press. (PB: pp. 288, £11.95, ISBN: 9780691150093)

When research, teaching and writing about history is being done, it is usually justified with reference to the problem of induction. Though induction is called a 'logic', it is really a guess about probability. If the sun has risen every day for all of my life, then it will probably rise tomorrow. There is no necessary reason implied here, no deduction from principles, simply a guess based on spotting a pattern and then predicting it into the future. So the largely descriptive practice of history becomes articulated as a search for patterns which trail from then to then, from the crow's nest of now. Not always, because it could be justified as a literary or cultural practice which is being done for its own sake, or for commercial reasons of selling books and TV series, but when a loftier reason is called for it would usually be about 'learning' from history. If you don't know your past, you are doomed to repeat it. How can we know where we are going if we don't know where we've been?

In theory then, when it comes to wars, revolutions or financial collapses, we can go back and look at what happened and use it to shape our actions now with the benefit of hindsight. Is the collapse of 2008 like that of 1929, or 1837? There is no certainty in such analogies, and no time is exactly the same as any other, but it's probably better to have this information than not. Just as telling the story of the holocaust might warn us about what happens when economic crisis meets nationalism, so might the story of the great depression being addressed by the New Deal encourage us to think hard about the possibilities of Keynesian economics as an intervention in the current crisis. In the language of the classroom, the past teaches lessons, and so we need historians to translate the voice of history into stories with morals for policy and politics today.

There is a second variant in this strategy, one that encourages us to look back so that we can look forward, but by opening possibility rather than suggesting probability. This is the history of things that authors think were rather better then than now, a history that

doesn't so much to explain the present as contradict it. Let's call this utopian history – the search for reasons why the present doesn't have to be as it is and the future can be something altogether more exciting.

That is mostly why Gabriel Kuhn is interested in Golden Age pirates from the late 17th to early 18th centuries. He sees them as an example of a proto-democratic and anti-imperial practice, and wants to suggest that we can learn from this past in order to open a different future. Rather than 'this happened in the past so it is likely to happen in the future', Kuhn says (against an implicitly neo-liberal present) that 'this happened in the past so it *can* happen in the future'. It's almost the opposite of induction in terms of probability. It's like suggesting that there was a solar eclipse yesterday so there might be one today, or that the dice will roll snake eyes for the seventh time. Rather silly, you might say, but perhaps also rather important in a historical context where policy makers and politicians assume a broad consensus that global capitalism is the end of history. Market managerialism and the efficient markets hypothesis then become, *ceteris paribus*, the answer, and the only interesting thing about history is how long it took us to get there. (Or perhaps merely to distract us on long aeroplane journeys.) Historicizing the present in such a smug contemporary context then matters, but for rather different reasons. If you don't know your radical past, you are doomed *not* to be able to repeat it. Or, how can we know where we *can* go, if we don't know where we have been?

Utopianism is easy enough to criticise of course. Castles in the air seem pretty pointless when compared to real castles, but we'll come to that in a while. Utopian history is a slightly different matter though, because it must be (in part) judged as history. If you claim knowledge of the 1837 depression, then you need a grasp of the facts that can be known. You need to be able to footnote dusty sources in forgotten corners of libraries, and to claim that you have spent a long time turning pages and bending over desks. So, if you claim knowledge of pirates, your sources matter here. Kuhn's book has a problem with this, because the sources are a problem. Though we can infer something about pirates from contemporaneous court records, newspaper accounts, travel books, broadsides and popular ballads, the pirates are always being spoken for in such accounts. They almost never speak themselves, with even their gallows speeches being written by moralists of radical or conservative stripe. Demonized by states and merchants, but glamorised by the common people and those who wished to sell stories, pirates are effectively constructed by the interference patterns between these different sources of representation. Their reality largely died with them, sunk in blue Caribbean bays or hanging raven-pecked from gibbets.

Such lack of evidence hasn't stopped people from making money by telling their story for three hundred and fifty years. The glamorous rogue of *Pirates of the Caribbean* has been sold many times, as has the violent psychopath who commits atrocities that are described in detail and then condemned with vehemence. Even the gurning figures of pantomime fun need to be located here, because they establish the conditions of possibility for the man with the hook and a chest full of treasure. Most importantly for Kuhn though, over the past thirty years a radical pirate has been constructed by social historians such as Christopher Hill, Marcus Rediker, Peter Linebaugh, Peter Lamborne Wilson, Stephen Snelders and others. This sort of pirate didn't really exist before in anything but fragments, but has increasingly become the representation of a tradition of

dissent which carries the skull and crossbones into contemporary debates about intellectual property, via the Paris Commune and G8 protests. *Life Under the Jolly Roger* adds little to any of these works, since it relies on the same materials, but Kuhn manages to summarise the sorts of issues at stake in this literature, at the same time as he endlessly repeats a warning against the dangers of romanticization. At times, the book is simply a long list of pirated quotations from other authors and ends up reading like a sort of textbook on what people have said about the radical pirate for those students doing a 'Piracy 101' module.

To summarise, this guerrilla pirate is an enemy of mercantile capitalism and the imperial state, and a social bandit who is supported by most common people. Such pirates are also tolerant when it comes to questions of nationality, ethnicity, gender, sexuality and disability, and practice a form of rough democracy in which they elect their own leaders and are magnanimous to those who don't resist them. There is probably some truth in all of these claims, though perhaps not as much as some might like to believe, and hence it should not surprise us that pirates have come to matter for utopian historians. Searching for examples of practice that can shame the present, and shape the future, the historian presents the pirate ship as an anarchist collective populated by diggers and levellers. Educated guesses and suppositions fill in the gap between wishful thinking and desire. It's enough to make a historian turn in their grave, or break a quill.

I overstate the case, but do so deliberately. Kuhn is very often concerned to withdraw from such strong claims, pointing out that pirates sold slaves and raped women for example, but neither he nor PM Press would want that to be the marketing pitch for the book. The whole point is that this pirate opens things up, and allows for forms of thought about possibility to be laced with the smell of spiced rum and the exciting possibility of blood and shouting. It is fantasy, with all the identifications and projections which that involves, though that certainly doesn't mean that it can't be politics too. Kuhn's pirates also fly some other flags – Deleuze and Guattari, Foucault and Nietzsche. They become nomadic war machines, who resist biopolitics in the name of Dionysian excess. Casually dressed in fashionable theory, they swashbuckle their way into the radical imagination, post-structuralists before structuralism, anti-capitalists before capitalism. It's a powerful brew, and no wonder that writers from a wide variety of backgrounds get seduced by it – even if they work in Business Schools (Land 2007, Parker 2009)

Peter Leeson's *The Invisible Hook* (2009) uses the same sort of historical evidence as Kuhn's book, but reaches some rather different conclusions. Leeson's book (like Levitt and Dubner's *Freakonomics* and many other similar titles) is a primer in behavioural economics, and the title is intended as an echo of Adam's Smith's 'invisible hand', the aggregation of individual rational choices. Leeson is concerned to show that pirates were rational economic actors, and not irrational psychopaths whose behaviour was incomprehensible to all but them. I suppose he thinks that if he can demonstrate the logic of piracy, as Levitt and Dubner (2006) did with drug dealing, he will make some money himself, and prove that behavioural economics even works in the most unlikely situations. He seems to be aiming at rather a straw target, because I'm not exactly sure who Leeson is arguing against, but his analysis of the 'hidden economics of pirates' is

convincing enough in a peg-legged sort of way. He writes about why spreading stories about torture was a good idea to encourage the development of fearsome pirate reputation, which in turn saved resources when they were attacking ships. He shows how pirate democracy was a response to the principal-agent problem, and the Jolly Roger was a brand which signalled to the market. Admittedly he does make the pirates sound like autistic accountants, but it's a good yarn that he spins.

There are a variety of ways in which Leeson's analysis might be deemed a bit thin, as well as ideologically driven, but that's not really my point here. Whether you buy the book on Leeson's bounded rationalists in search of strategies to maximum benefit, or Kuhn's metrosexual autonomists engaged in potlatch economics, doesn't really depend on the facts of the matter or the quality of the analysis. Neither author can point to indisputable evidence, and both books use the same sources, and tell the same stories. (Pretty much as every book on piracy has been doing since the publication of Captain Charles Johnson's *General History of the Robberies and Murders of the Most Notorious Pyrates, and Also Their Policies, Discipline and Government* in 1724.) It's rather like a choice between Errol Flynn and Johnny Depp, both pirates who swing around on ropes a lot, but are very different in the way they play their parts. I think that the only basis for a choice between Kuhn and Leeson is what lessons we *want* to learn from history. Leeson wants to prove that most people, most of the time, behave according to a calculus of incentive and reward and that economics is the best way to understand what people do. Kuhn is looking for inspirations for a radical politics. These aren't necessarily incommensurable lessons for an anarchist libertarian, but they are clearly intended to sell to different audiences. Leeson's book ends up advocating markets and rolling back the state, as well as suggesting that 'workers democracy' is all very well, but you can't run Wal-Mart like a pirate ship. Kuhn suggests that the pirates show us something about the potential for revolutionary organizing, and doesn't mention Wal-Mart, but I would guess he wouldn't shop there.

Personally, and for what it's worth, I think that Leeson's book is better. It adds to the panoply of ways in which pirates can be understood, and assumes that they were engaged in forms of rational economic action. It doesn't moralise that much, except about his one dimensional version of economics, and forces you to think about what you know (although he does make some rather odd comments about homosexuality.) Kuhn's book is not a paradigm shift, despite his name, and he doesn't really end up thinking very hard about what he wants the pirates to do for 'radicals today'. He warns not to get carried away with our romanticization of a bunch of people most of us would cross the street to avoid, but then goes ahead and does it anyway. I prefer my fantasies to be thoroughly fantastic, so Leeson's determined refusal to attach a politics to piracy ends up being the more challenging thought experiment. I might not agree with Leeson's version of the imperialism of economics, but *The Invisible Hook* has a lot to say to present day politics too.

If we take the current examples of piracy off the coasts of Somalia, Indonesia, Nigeria and so on, and apply Leeson's dispassionate calculus, we are left without a peg-leg to stand on in terms of justifying present day policies. If any of us lived in poverty, and saw huge ships trundling along on the horizon, we would probably feel rather hostile to the 'laws' that govern international trade and the relations between states. Another book

published in 2009, written by balding British TV hard man Ross Kemp, makes this point too. Kemp's breathlessly ordinary attempts to meet pirates are good 'content' for a book and a BBC TV show, but they are also quite convincing demonstrations of the inequalities of the international order. Kemp shows us that pirates have reasons for being pirates, and ironically one of the main reasons is the dominance of ideas of the market which Leeson finds so compelling. I'm not sure that Somalians would see the irony though, as industrial waste washes up on their poisoned beaches, and killing has become a national industry. It seems that the unintended consequence of applying neo-liberal economic policies on a global scale is to provide very rational reasons for some people to fire rocket propelled grenades at container ships.

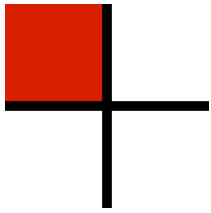
There is no definitive answer to the question of what we can learn from pirate history, but there are two things that might be provisionally concluded. One is that representations of pirates will continue to be sold by other people for money. Kuhn and Leeson are in that respect not much different from Captain Johnson, Johnny Depp and Ross Kemp. The second is that since we don't seem to agree about what we learn, we might as well be clear about what we want to learn. There's an odd paradox in the very idea of historicising the present. It could lock us in to history in ways that make path dependency inevitable, and prevent us from imagining anything that isn't now. But it could also show us that now wasn't always the case, and that things have been done differently in other places and times. Leeson shows us that this is not necessarily a romantic or nostalgic argument and he doesn't need Kuhn's radical baggage to show why piracy made, and makes, sense. What Leeson lacks is any sense that the future can be substantially different from the past, assuming that the lesson that we learn that is that we should learn the lessons of economics. But if recent history is anything to go by, we would be better assuming that many economists don't understand politics, and hence the possibility of change in the social conditions that produce rationality and market exchange. It is this very possibility for change that shows us why those sympathetic to pirates should be suspicious of arguments that assume that history teaches lessons, unless the lesson is that the future is open.

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Organizational memory: Narrative control and resistance*

Michael Rowlinson

review of:

David M. Boje (2008) *Storytelling organizations*. London: SAGE. (PB: pp. 282, £26.99, ISBN: 9781412929776).

This book is all about the stories we tell ourselves (p. 6), and David Boje is one of the best storytellers around in management and organization theory. But he is difficult to pin down, and he knows it. He roams around through vast fields of literature, including history, literary theory, and sociology. He says his book is an exploration of ‘complexity, collective memory, strategy, and organization change’ (p. 2). It could easily find its way to becoming a recommended text for a course in any of those subjects, and I hope it does. His analysis of the controversies between different schools of thought in strategy should be required reading on any strategy course, and if the set text is Mintzberg et al.’s *Strategy Process* (2003) then Boje’s list of their misreadings should be obligatory. Boje’s output is prolific, and his contributions to management and organization theory are wide ranging. An indication of this is that he cites nearly fifty of his own references in this book, which represents a kind of synthesis of his previous research.

My own interest in Boje’s work centers on history and memory (see Rowlinson et al., 2010), and Boje’s potential contribution to a critical perspective on organizational memory studies. So I will focus on a series of related themes in *Storytelling Organizations*. For a start I outline Boje’s critique of the instrumentalist treatment of memory in the knowledge management fad, on the basis of which he develops his own typology of collective memory, drawing on the sociologist Maurice Halbwachs. Along the way he deals with the role of founders in organizational storytelling, the role of memory in sensemaking, and the relation between orality and textuality in organizational history. While Boje finds misreadings in the work of Mintzberg and others, it is not difficult to find some serious misreadings by Boje, and at times his excessive formalization of concepts degenerates into a kind of pseudo technicist

* I would like to thank Thomas Basbøll and Nick Butler for their comments.

mumbo-jumbo. This is at odds with his engaging conversational style of writing in other parts of the book, and his brave decision to share details from his personal background in a revealing 'autoethnography'. Methodologically it is worth noting Boje's imaginative use of publicly available documentary sources. Finally, there is the question of whether Boje is writing as an advocate of resistance or as a would-be consultant, or whether he thinks the two roles are compatible. Prompted by Boje's own sense of fun, I conclude with a proposal for a roundtable discussion on organizational memory with Boje as the guest speaker.

Knowledge management

In an extensive glossary Boje defines story, or 'storying' as he prefers to call it, as 'an oral or written performance involving two or more people interpreting past or anticipated experience' (p. 262). As far as Boje is concerned, every organization is a Storytelling Organization, not just the glamorous or notorious organizations we are all familiar with (p. 4). Boje's emphasis on 'storying' as an interpretive activity is very much at odds with the knowledge management fad, which treats stories and memory instrumentally as 'knowledge assets'. As Boje argues:

This translates to getting tacit knowledge from narratives and emergent stories. Fortunately or unfortunately, things are not so simple. Transferring tacit knowledge (i.e. stories) is problematic for all the obvious reasons cited in this book. (p. 214)

Boje makes the point that collective memory is *not* 'like a book, where the pages are stories and one only has to recall the story, as one would recall a page from a book... The problem with the book or computer metaphor, is collective memory is not an imprinting that is invariant, or hidden for all times in one's subconscious library of permanent texts or computer chips, all stored away neatly in the brain' (p. 83).

Boje dismisses 'the knowledge management, knowledge reengineering and learning organization fads of story consulting', and he is highly suspicious of the 'managerialist ideology' that sees any story as belonging to the corporation (p. 95). He sees the dark side of story consulting, whereby,

in the new global knowledge economy, a tacit knowledge practice communicated in stories of skilled labor of one country is being abstracted, codified, and diffused to less skilled, lower paid labor in Third World factories. That's deskilling... (p. 215)

It is not clear whether Boje sees this kind of knowledge capture as impossible or simply as objectionable. On the one hand he rejects the idea that 'emergent stories' are 'tacit-knowledge', but on the other hand he states that 'story rights are being violated' by corporations (p. 95).

For Boje, the concept of an *emergent story* is particularly important. He defines it as 'absolute novelty, spontaneity, and improvisation, without past or future' (p.3). According to Boje, 'emergent stories' need one or more of the following five qualities in order to become enduring: *authenticity*, *contagion*, *institutional support*, *entertainment value*, and *cultural force*:

Most emergent stories lack the quality of authenticity, where they are believable beyond those present. Most also lack the quality of contagion, where gossip jumps to outsiders to become rumour... Most emergent stories lack the quality of institutional support to where they become legend. A few have entertainment value. (p. 38)

Once an emergent story has become a legend then presumably it can be captured by the knowledge management story consultant and violated by a corporation. But emergent stories can never be fully captured or suppressed. The corporate control narrative is constantly orchestrated by an 'entire army of narrativists' and yet it is continually threatened by 'emergent counter-stories' from 'gossip, rumour, rebellion', and when '[g]affes in stylistic competency or by whistle blowing disclose strategic secrets' (p. 129).

Organizational memory

Boje does not use the term organizational memory. Instead he refers to 'collective memory', which he has explored as part of a long term project (p. 3). He claims that '[c]ollective memory has not been adequately theorized, much less researched in story and narrative studies' (p. 75). Strangely, this suggests that Boje locates his analysis of collective memory in 'story and narrative studies' rather than management and organization theory. He does not even cite the mainstream literature on organizational memory (e.g. Walsh & Ungson, 1991), let alone the critics (e.g. Feldman & Feldman, 2006; Nissley & Casey, 2002). Although he does not explicitly say so, one reason for referring to collective memory in organizations rather than organizational memory is that organizational memory could easily be confused with official managerial memory, as it is in the knowledge management fad, and Boje continually emphasises that management does not have control over all aspects of collective memory. This is a missed opportunity, because several of us have been trying to develop a critical perspective on organizational memory. Andrea Casey in particular has a longstanding interest in collective memory in organizations (Casey, 1997) and an ongoing concern with sociological models in the related field of organizational learning (Casey, 2005). Nissley and Casey's (2002) criticisms of the storage bin model that treats organizational memory as a repository of facts reflects the wider critique of mechanical models in which memories are seen as merely computer files (Rose, 2008). Boje's rejection of the book or computer metaphor for memory in knowledge management needs to be located as part of this broader critique.

In fact there has been an 'explosion of interest in... collective memory, cultural memory, and commemoration' (Bernstein, 2004: 165), or social remembering (Misztal, 2003), under the general rubric of 'social memory studies' (Olick & Robbins, 1998: 24-25). Social memory studies remains 'a nonparadigmatic, transdisciplinary, centerless enterprise' (Olick, 2008: 24-25), but even so it is hard to excuse Boje's neglect of this burgeoning literature. Part of the problem is that Boje simply tries to cover too much ground in *Storytelling Organizations*, and the book is burdened with an excess of references. Another problem is that when he discusses concepts such as collective memory he does so as if he is coming to seminal texts de novo, offering his own insights without reference to the numerous commentaries and interpretations.

The French sociologist, Maurice Halbwachs (1877-1945), is usually credited with introducing the concept of collective memory into contemporary usage (Misztal, 2003; Olick, 2008; Olick & Robbins, 1998: 106; Zerubavel, 2003). Aside from a few notable exceptions such as Andrea Casey, Halbwachs is ritually cited but rarely read in organizational memory studies. This means that Boje's detailed reading of Halbwachs's *Collective Memory* (1980 [1950]) is valuable. He emphasizes Halbwachs's point that 'when we have a remembrance we do so, 99 per cent of the time, with the thoughts, ideas, and feelings of various groups, of which we are a part' (p. 81). However, Boje characterizes Halbwachs's theory of collective memory as 'a bridge between Bergson's sensemaking of individuals and Durkheim's social solidarity of social construction by groups. It therefore falls in between the scope of phenomenologist and social psychologist' (p. 82). By contrast, the sociologists Olick and Robbins (1998) maintain that 'Halbwachs developed his concept of collective memory not only beyond philosophy but against psychology'. Ricoeur places Halbwachs firmly in the Durkheimian school which opposed its own 'a methodological holism' against methodological individualism, and made individual memory problematic, even threatening to dismiss the then emerging phenomenology 'under the more or less infamous label of psychologism' (Ricoeur, 2004: 95). Social memory studies derived from Halbwachs is therefore partly defined by a rejection of 'an individual-psychological approach to memory' (Olick & Robbins, 1998: 109). This has serious implications for the prevailing methodological individualism in organizational memory studies, which Boje does not consider.

Boje is clearly enamoured with the work of Paul Ricoeur, but unfortunately he does not discuss Ricoeur's major work, *Memory, History, Forgetting* (2004), which provides one of the best critical guides to Halbwachs. This is probably because *Storytelling Organizations* pulls together Boje's research over the last twenty years, most of it written before *Memory, History, Forgetting* was published.

Boje criticizes Halbwachs for not elucidating a typology of collective memory (p.86). This is slightly misleading because Halbwachs (1980 [1950]) in fact distinguished between several types of memory, including autobiographical memory, historical memory, and history, as well as collective memory (Olick & Robbins, 1998: 111). From the various surveys of memory studies it is clear that there are more than enough typologies to choose from for studying collective memory in organizations (Mai, 2009). Boje's own typology is overly technical and I doubt that it will be taken up. But many of his observations on collective memory are highly pertinent for organizational memory studies. As he continually reminds us, '[p]eople are more than just limited information processors. People are symbolic, reinterpret history, bring multiple discourses (ethical, cognitive, aesthetic) to bear in the moment of performing stories, especially collectively told ones' (p. 51). Collective memory 'is also collective forgetting, collective rehistoricizing, and collective striving for coherence' (p. 54). Although the importance of Foucault is widely recognized in social memory studies (Misztal, 2003; Olick & Robbins, 1998), his work has been neglected in organizational memory studies. Boje reminds us of the relevance of Foucault's concept of 'counter-memory' – the 'marginalized counterstories' (p. 89) – and the ever present possibility that managerial collective memory will be parodied or ironically taken at face value.

Founders

Boje has conducted a long line of ‘founding narrative research’ (p. 9) on Wal-Mart, Disney, and McDonalds, and bringing these studies together in *Storytelling Organizations* shows just how impressive they are. Boje traces how founding narratives develop over time, often from very sparse beginnings, as at Wal-Mart, where the ‘petrified’ founder narrative is trotted out whenever there is a scandal to demonstrate that whatever is being done conforms to the ‘founder’s vision’. Managerialist collective memory is founder-centered and ‘always embraces the chimeras of origin and ending’ (p. 87). Boje defines a ‘Founding Narrative (often called founding story)... as a sentence or paragraph (or longer) that answers the question, where did we come from?’ (p. 101). He raises the question, ‘do originary founding narratives exist, or are they retrospective concoctions, retrofitted after the fact, after many years?’ (p. 10) – wisely he doesn’t give a definitive answer. Of course, he is sceptical about the advice from corporate culture gurus such as Schein ‘that founders or subsequent ‘managers can create cultures’ [e.g. founding stories]’ (p. 212). Although he doesn’t cite them, Boje lines up with previous sceptics towards founding narratives (e.g. Martin, 1985; Martin et al., 1985), who also note that in anthropology cultures are seen as being ‘highly resistant to change’ (p. 212).

Boje’s main sources are company websites and annual reports, and from these he highlights the ‘changeable aspects of founding narratives’ for companies such as Wal-Mart (p. 11). Perceptively, Boje sees that although founding narratives are changeable, organizations are also constrained by the stories they tell themselves when they contrast the present to the past, e.g. at Disney storytellers ask “‘What would Walt do?’” Or at Wal-Mart where people always ask, “‘What would Sam do?’”... Or at McDonalds, “‘What would Kroc do?’” (p. 193). Culturally-oriented business historians such as Per Hansen (2007) have been coming to a similar view of the significance of historical narratives as both resources and constraints for organizations.

Sensemaking

According to the blurb on the back of the book Karl E. Weick doesn’t know what he thinks until he sees what David Boje says. Given such a compliment it is hardly surprising that *Storytelling Organizations* is littered with sensemaking. It must be one of the most over-used words in management and organization theory. At times it is tempting to ask whether Boje would make any less sense if he simply deleted the word, as it often seems superfluous. Of course its inclusion functions as a sign that Boje sees himself as an exponent of style-as-theory (Van Maanen, 2000). There is a suggestion early on that Boje might develop a critique of Weick, as when he claims to ‘go beyond retrospective sensemaking’ (p. 13) – but predictably it turns out that it was *readers* of Weick, not Weick himself, who mistakenly ‘took sensemaking to be about emergence of variety rather than control’ (p. 199). Nevertheless Boje does hint at the authoritarian connotations of sensemaking (c.f. Rowlinson, 2004: 618) when he writes of the opposition to orchestrated ‘sensemaking narratives of control’ (p. 128).

Most of the managerialist founding narratives that Boje critiques are produced from an objectivist perspective. By examining the process by which they are retrospectively constructed and changed according to the needs of the moment Boje reveals the relativism that belies that objectivism. But then the social construction of these narratives of control can be seen as an instance of sensemaking, which is about retrospective decisiveness, whereby people 'start with the outcome and reconstruct a history' that led up to it in a single convincing narrative (Weick, 1995: 184). The appeal of sensemaking for Boje is that it seems to allow for alternative interpretations of the past from multiple cultural perspectives, with actors constantly reshaping representations of the past as they enact their own present. But this relativism is double edged, because it also licenses the orchestration of control narratives or even dubious historical revisionism (Booth et al., 2007). Unlike Weick, Boje confronts the dark side of corporate power, and this necessitates a more ambivalent view of concepts such as sensemaking than Boje is prepared to take. Sensemaking is thus a constraint on Boje's analysis of storytelling organizations.

Orality and textuality

Boje prefers stories to narratives. According to Boje, a narrative is a 'linear sequence' with a discrete beginning, middle, and end. It is about centering or control, and is 'usually a backward-looking (retrospective) gaze from present, back through the past, sorting characters, dialog, themes, etc., into one plot, and changes little over time' (p. 7). By contrast, a story 'is more apt to be dispersive (unravelling coherence, asserting differences)' (p. 7). In general, Boje associates narrative with text and control in organizations, whereas stories, and especially emergent stories, are transmitted orally and less susceptible to control. Boje is suspicious of the subordination of orality to textuality in formal organizations, where everything is written up in files, knowledge is collected, and all actions have to be signed-off (p. 86).

For all of his immersion in literary theory, Boje fails to spell out exactly how or why his distinction between story and narrative is at odds with the generally accepted distinctions between story, plot, and narrative. A narrative is generally regarded as a form of telling a story, a series of events, that are linked by a chain of causation, the plot (Cobley, 2001). A narrative generally has a story and a plot, whether it is linear or not, and they are not usually regarded as mutually exclusive, with narrative being 'bad' and story being 'good'. Boje's normative connotations detract from the usefulness of these analytical tools, which is not to say that one cannot distinguish between good and bad narratives.

Boje romanticizes the orality of living stories in collective memory (p. 240). Whether he likes it or not, management and organization theory are by definition almost entirely textual, as is clear from Boje's own prodigious textual output. From reading his book, my guess is that Boje is a good oral story teller, but he conveys that textually. Nevertheless, he seems to be on to something when he notes that annual reports increasingly 'attempt to mimic orality (interviews or letters by the CEO), and some visual artistry. Reports are looking more like magazines. It is a level of collective writing by artists, accountants, executives, consultants, and division heads that has yet

to be studied' (p. 23). In other words, annual reports appear to be undergoing an interesting change as a form of narrative and the stories they present. Even so, Boje over-romanticizes oral storytelling.

Misreadings

Boje accuses Mintzberg et al. (2003) of misreading, abominably, the work of Selznick, Chandler, and Schumpeter (p. 109). But some of his own readings are questionable. When discussing dialectics, for example, Boje declares that Marx rejected Hegel's 'teleology of spirit':

Marx... thought a non-spiritual teleology, a determining political economy (instead of Spirit) would bring the working class (antithesis) to oppose the pesky capitalist (thesis), and yield a new thesis: a democratic form of organizing, *with workers and capitalists deciding together how to invest and organize the enterprise*. But the dialectic ran a more Soviet course, and the revolution of the workers' liberation from oppression, did not occur. (p. 21; my emphasis)

Clearly Boje cannot conceive of a non-hierarchical mode of production in which egalitarian institutions decide on the level of investment without capitalists (c.f. Marglin, 1976 [1974]). Fair enough, but if Marx thought the same then he was not a 'Marxist' (c.f. Engels, 1970 [1890]; Marens, 2009: 93). What this misreading suggests is that Boje is critical of the capitalist corporation on its own terms, as if it could fulfil his call for a more honest and transparent form of storytelling organization. But still, as Boje might argue, it would be rash for Marxists to rush into revolution without recognizing that the stories we tell ourselves will affect the way we go about it.

Boje refers to himself as one of 'those who did not buy into the two-by-two cage narrative of Burrell and Morgan' (p. 56). Again, fair enough, but it is an exaggeration to say that 'social phenomenology, symbolic interactionism, discourse, and intertextual analysis of poststructuralism' cannot be contained in 'the Burrell and Morgan cells'. Boje presents himself as the outsider, playing 'Off-Broadway', while Burrell and Morgan's 'four cell prison became widely popular on Broadway' (p. 56). What is so frustrating about the advocates of style-as-theory, such as Weick and Van Maanen (2000) is the way they present themselves as outsiders. But all too often the alleged insiders they inveigh against are critics, such as Burrell and Morgan (see Weick, 1995: 35), whose stance might be something more than mere style. Whatever their inadequacies, Burrell and Morgan's (1979) paradigms provided space for radical humanist or radical structuralist critiques, especially in UK business schools. Style-as-theory is just the kind of aesthetic radicalism that the new spirit of capitalism can easily accommodate (Boltanski & Chiapello, 2007).

Boje claims that, 'Like Ivan Illich (1993) and Walter Ong (1982), Walter Benjamin thought that orality storytelling was being corrupted by ways of textuality, ways that written narrative imposes a BME [beginning-middle-end] prison onto oral telling' (p. 58). Leaving aside Illich and Benjamin, I was intrigued by this reference to Ong (2002 [1982]). As far as I can make out this is the only time that Ong's *Orality and Literacy* is cited by Boje, and he obviously thought he could use it to support the contention that textuality is corrupting orality. But Ong could actually be used to make the opposite

case, that management and organizations are too often presented as if they are oral cultures, whereas the oral cultures Ong deals with are non-literate or preliterate, and the orality of management is a kind of “secondary orality”... which depends on writing and print for its existence’ (Ong, 2002 [1982]: 3). Of course memory predates writing, but Ong argues that ‘[w]riting created history’, and print transformed history, not merely in quantitative terms by increasing the number of written ‘facts’, but also by fostering a feeling for closure that affects the plotting of historical writing, ‘the selection of the kinds of theme that historians use to break into the seamless web of events around them so that a story can be told’ (Ong, 2002 [1982]: 168). In other words, narratives with a beginning, middle, and end are a concomitant of text. Another concomitant is the kind of close reading of texts that Boje himself conducts to detect misreadings.

As Basbøll (forthcoming; Basbøll & Graham, 2006) has demonstrated, sensemaking collapses under the scrutiny of close reading. As a genre, style-as-theory tries to evade close textual analysis by its own attempts to mimic orality, almost as if it is a written record of a conversation, recounting a series of encounters with academics who break with convention (e.g. p. 57), rather than a carefully constructed text. Style-as-theory also presents itself as iconoclastic, unconstrained by the conventional boxes and cells such as paradigms or schools of strategy. But categorization is unavoidable in the textual realm of academia, and Boje’s textuality is nowhere more evident than in his own proliferation of technicist typologies.

There is always a danger of degenerating into mumbo-jumbo when technical jargon is used to make literary theory sound scientific (Wheen, 2004). Boje bombards us with scientific neologisms such as ‘systemicity’, his ‘replacement word for the outdated static linear-hierarchic conceptions of whole “system”’ (p. 29). Here are some of the worst examples of Boje’s pseudo-scientific technicism:

Holographic strategy is multi-voiced, multi-linguaged, and polyphonically and now multi-stylistically dialogic. (p. 66)

[P]olypi strategy storying is the multi-dialogized complexity whereupon polyphonic, stylistic, chronotopic, and architectonic dialogism collide with monologic narrative order. (p. 98)

The third Cybernetic Revolution is underway, making whole system monologic singularity a dialogical whirlwind. (p. 62)

Contemporary strategy is not just multi-chronotopic. Strategy can be chronotopically dialogic. (p. 138)

The point here is that Boje’s exposure of misreadings in the various schools of strategy, as well as the mimicking of orality in annual reports, are manifestations of textuality through close readings of written texts. Unfortunately there are aspects of Boje’s own text that do not hold up well under a close reading, in particular his contradictory adherence to the imitation orality of sensemaking on one hand, and on the other hand his tendency to construct technicist typologies. To be blunt, just because something sounds good in a seminar, doesn’t mean it will read well in a book.

Autoethnography

Along the way we learn a lot about David Boje in *Storytelling Organizations*. As he reminds us, 'we retrospectively recall past events in a way that supports our concept of who we are' (p. 5). Boje repeatedly recalls the past in a way that supports his concept of who he is. We learn of how he proposed to his wife at the 1995 Eastern Academy of Management (p. 75). He tells us that he is 'a Harley (after market) builder and rider' (p. 33). Then there is the name-dropping: 'I met Alfred Chandler Jr. when he came to present to the strategy faculty at UCLA in the 1980s' (p. 141). And he doesn't just meet these people; he is with them at some of their most poignant moments:

I was in Lou Pondy's office the day he opened his rejection letter from the editor of *Administrative Science Quarterly* (ASQ). It was 1976. He read parts aloud. I tried not to listen but had to listen. He gave me the letter to read the rest. I tried not to read but had to read. (p. 31)

And they are on hand to reassure him that he is still an outsider:

Bill Wolfe, when visiting my office at UCLA, said he could tell I did not fit in, I was not part of the institution. He was right of course, but I could not, at the time, discern how he figured it out. (p. 84)

Fortunately there is a hint of self-awareness when Boje admits that '[t]he writing game is to make academic heroes, while leaving the working staff voiceless. And now I am caught playing the game' (p. 162). But this mimicking of orality transgresses the norms of scholarly discussion and peer review. By inserting himself into the text he is claiming prerogatives for his position as that of a wealthy American who has worked at elite institutions and is on intimate terms with the great and the good. Again, it jars with his obvious commitments and, more importantly, slightly undermines the serious attempt he makes to write an autoethnography.

In the autoethnography, Boje tells the story of a family tragedy: the death of his Aunt Dorothy (p. 25). Here Boje delivers something personal but interesting, well researched and genuinely moving, and I'd encourage it to anyone to read for themselves. Very few authors would attempt something like this, and even fewer could pull it off. Boje says his 'autoethnography is not a story. It is in-between biography and impressions' (p. 239). It is a family memoir-cum-confession, which reveals his family background and upbringing in a way that gives the reader a real insight into where Boje is coming from. I won't try to tell the story, but from it we learn that Boje grew up in Washington State, he was a rebel as a teenager and spent his nineteenth birthday in a City Jail. In order to go free he had to leave the state, never to return. He did a tour of Vietnam, went to college – the first in his family – and then got a PhD. He finally got permission to go back to Washington state, but only because the authorities hadn't computerized his original records, not because he was deemed respectable enough to return (p. 231). On balance, Boje comes across a better person for telling us that he hasn't forgotten who he is and where he comes from. But it is a difficult balance.

Methods and sources

The sheer volume of Boje's research is impressive, and he uses a whole battery of qualitative methods, including interviews, participant observation, and 'document analysis' (e.g. p. 42). I am most interested in his documentary analysis. For the most part, Boje uses publicly available texts. He makes impressive use of internet research and on-line sources and clearly has a knack for doing this kind of analysis, although there is certainly scope for further articulation of his methodology. He demonstrates how much analysis can be done simply because corporations want to control narratives:

Narrative inquiry into [the] *stylistic maelstrom* generated by even one global firm is daunting. A global corporation puts out hundreds of pages of annual reports. It proliferates hundreds of pages of press releases, brochures, and advertisements. Add to this the countless speeches by executives at annual meetings, training sessions, and press conferences, plus everyday expressive conversation and gesture. (p. 125; emphasis in original)

In addition to textual sources Boje sensitizes us to the stories to be found in the juxtapositions of décor and architecture 'all around us' that often go unnoticed (pp. 23, 85). For example, like many of us Boje works in an institution where on one wall there are portraits of all the white male heads before the current one, and on another wall there are the smiling faces celebrating diversity (c.f. Swan, 2010).

Boje implicitly criticizes a crude materialist view that organizational communication is merely a representation of underlying interests or reality. 'Organizations enter, and evolve in, an already aestheticized, cognized, and ethically diverse environment,' he says (p. 156). And he avoids reification of the corporation when he notes that '[o]rganizations have multiple authors, beholders, characters, and directors, as do their environments' (p. 158). What is more, following Weber, Boje maintains that capitalism has always been rooted in aesthetics (p. 178).

Boje's methods are showcased in a series of vignettes and in-depth case studies. I particularly liked the vignette of Norwest Bank and its acquisition of Wells Fargo, with its '150 year history, and its stage coach logo' (p. 90). His in-depth case study of McDonald's (pp. 66-73) traces how its narratives have developed over time, including 'the McDonaldization of language' (p. 67). Interestingly he points out that the 'McJob' is a term which has escaped the company's control. Originally, for McDonald's, it meant a job for 'the physically or mentally challenged, who would work for less' (p. 67). Boje refers to the McDeaths of two McDonald's CEOs who 'had health issues that are allegedly related to fast food diet' (p. 70), even though in McDonald's Annual Reports from 2004 and 2007, Ronald McDonald got slimmer and younger over time (p. 133)!

Boje demonstrates how annual reports can be read by raising awareness of how '[e]ach line of a narrative or story is an answer to something (either from an old battle, or some new one brewing)' (p. 24). He focuses on 'how annual reports can be studied critically by deciphering stylistic elements that manipulate the definition of the situation' (p. 130) through a complex juxtaposition of 'laundry lists of income and expenses with the image-management narrative' (p. 132). He notes how annual reports have got 'longer, thicker, more multi-stylistic, and full of fragments' (p. 132), with 'photos of diversity',

for example, to persuade the ‘docile reader that the firm really does celebrate and value diversity’. According to McDonald’s Annual Reports, it is customers who ‘tell us we are inclusive’, as if the company is simply reporting what it has been told. A manifestation of the intertextuality of McDonald’s annual reports is that critics are alluded to but not named (p. 137).

Drawing on Bakhtin, Boje argues that in annual reports, ‘[t]he image narrative can be authentic style or part of deception, an illusion, or an imposter, as in Enron’ (p. 125). This highlights a methodological ambiguity in relation to representations of the past, as when Boje argues that

annual reporting to investors, can be quite imaginative re-presentations of history, a fictitious image, for example of environment commitment record that is plain greenwashing... Under the guise of image management, a past is created that never was. (p. 88)

It is never quite clear whether Boje sees himself as exposing, in an objective realist mode, the ‘false claims and distortions in image stylistic management’ (p. 126), or whether he is analysing corporate communication as a particular form of narrative control. From an objectivist standpoint, it could be suggested that there is a true and undistorted narrative waiting to be told, and not merely a variety of competing narratives. Hence he is a critic-cum-consultant, on hand to help corporations write an honest and genuinely polyphonic stakeholder narrative. When Boje states that ‘[o]ften the past is reimagined from the vantage point of the present’, the question must be asked, could it be otherwise? Is the corporate construction merely one of many competing narratives, or is it a distortion of the truth? Boje is never quite clear on this point, and he continually uses a kind of realist terminology of misrepresentation, false claims, distortions, manipulation, as if this can be unmasked to show the reality.

Boje has a sophisticated understanding of history. This comes through in his characterization of Chandler’s ‘comparative business history’ (p. 113) as a narrative of progress that rests ‘on the metaphysical illusion that the world is getting better and better’ (p.146). In Foucauldian, or Nietzschean terms, Chandler represents ‘monumental history’ (p.146). But Boje doesn’t locate his own research in relation to the ‘epistemological fragility’ of history (Jenkins, 1991: 11). Perhaps this is because Boje doesn’t really see his own research as history, being more concerned with representations of the past in collective memory. But if the study of collective memory is less about ‘what actually happened in history’ and more about ‘how we *remember* it’ (Zerubavel, 2003: 2), then Boje could be more restrained in his suggestion that corporate control narratives are false.

Resistance and collusion

Boje clearly identifies himself with the ‘critters’ who attend conferences such as Critical Management Studies (p. 241). As a critter, he states that

some of us resist retrospective-managerial-control narratives, we know that what is going on is a whole lot more fragmented, scattered, partial, and dialectic, indeterminate, and unknowable. (p. 176)

It is good to have Boje on our side. He is realistic about power and the limitations of resistance in a way that shows he has experience of it, as when he warns against heroics:

People, in corporate settings, often learn the hard way to only express the logic the boss most wants to hear! In a business dialog, we are rarely free to express the logic we think, feel, believe, or intuit. Nor do we engage (very often, or more than once) in emotive-ethical acts, and be that one person who speaks back to power, asking power to be answerable to what is happening to the Other....

but more often narrative control (by a boss or some dominant coalition) is so powerful, so threatening, so terrorizing, that people are mostly silent, saying and posing whatever power wants to hear and see. (p. 21)

Boje highlights the counter-memories that are subordinated to the managerialist collective memory:

Work abuse is written onto the body memory. Carpal tunnel syndrome from typing, calluses of the farm worker, back pains of the garment worker, burns on the arms of the fry clerk, nasty bruises on the legs of stewardesses pushing carts down the aisle, and so forth are remembered. (p. 93)

Nevertheless, without questioning Boje's commitment, it is worth questioning his strategies for resistance. For example, his 'antidote to McDonaldization' is much like Ritzer's (1996), 'home cook festivalism, visiting the non-chain, local restaurants, where people take their time' (p. 72). I admit to doing much the same thing, if only because my daughter and I are vegetarians, so McDonald's isn't much fun for us. But I don't really think I am challenging capitalism.

Boje criticizes founder narratives and 'the idolatry of former CEOs' (p. 88). But in their place he gives us CEOs who are real reformer-saviours, who do not need narrative control because they generate genuine stories. First there is Doug, the new CEO in one of Boje's case studies, the Gold Office Supply company, who 'in almost his first meeting with the executives uprooted a 'reserved for the CEO' (one was also reserved for each of several VPs) parking sign and threw his on the executive meeting table, demanding to know "who put up this sign? This is not the kind of leadership I will have around here"'. Boje approves of this as an example of Doug 'shaking up the ways of making sense... with some very emotive-ethical as well as answerability ethics dramatics' (p. 50). Then there is Wayne Alderson, who became VP of operations at Pittron, a steel company just outside Pittsburgh, and turned it round after a bitter strike in 1972. 'Wayne did it', Boje tells us, through a combination not only of 'economic action' but also 'spiritual action' (p. 182). Boje contends that managers can bring a 'religious/spiritual philosophy to bear on their management of people' (p. 185). He claims to have refuted the 'Critical Theory of the Frankfurt School (i.e. Benjamin, Horkheimer, Adorno, Marcuse, and Fromm)', which mistakenly 'rejects organizational religious or spiritual metaphysics and classifies these as ideology used to exploit the consumer culture industry' (p. 186).

Boje maintains that 'restorying of past and future is not just a matter of consultants convening storytellers in a room and asking them to pass a talking stick (or microphone)' (p. 82). But it is never quite clear whether Boje is offering a fundamental

critique of the ‘story consulting’ fad, or just another variant of it (p. 189). Boje calls up Bakhtin’s concept of polyphony:

A polyphonic strategy story is one collectively and generatively written, visualized or orally told by all the stakeholders to an organization. It is said to be the next frontier of strategy, but is so very rare, in comparison to monologic narrative. (p. 97)

It is difficult to avoid the inference that for CEOs brave enough to try it, Boje is the consultant who will give it to them straight, and help them to formulate a proper polyphonic strategy that dispenses with false images and ‘the tacit collusion of investment experts, workers, and spokespersons’ (p. 130) to create a genuine consensus. Read in this way *Storytelling Organizations* could be an inspirational challenge for management, rather than a critique.

A roundtable with David Boje

Boje concludes by having ‘a bit of fun’ (p. 5), scripting an imaginary roundtable conversation between himself, Bakhtin, Benjamin, Dostoevsky, Heidegger, Ricoeur, and Stein. This prompted me to think about who I would like to invite to a seminar on organizational memory if David Boje agreed to join me. For a start, two I have already mentioned: Andrea Casey, who initiated a critique of the storage bin model of organizational memory (Casey, 1997; Nissley & Casey, 2002), and Per Hansen, who would bring a historian’s perspective on organizational culture and storytelling (Hansen, 2007). Then two newer researchers: Gabrielle Durepos, who uses actor-network-theory to trace the construction of company histories, a method she describes as ANTi-history (Durepos, 2009; Durepos et al., 2008), and Daniel Mai, whose unpublished thesis surveys a vast range of literature on collective memory in organizations, much of it not yet translated into English (Mai, 2009). I am sure David Boje could also suggest some possible participants worth inviting. I hope this proposal for a seminar makes it very clear that I see this critical review as an acknowledgement of the importance of Boje’s *Storytelling Organizations* and the new lines of research it suggests. There are few books that would be worth reading in such depth, reviewing at such length, or organizing a seminar to discuss. As with any text, multiple readings of *Storytelling Organizations* are possible. I have tried to claim it for a more critical perspective on organizational memory, as a counter to the knowledge management and story consulting fads.

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