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Panel 4

The Future of Myth

(Fri 26/03/2010; 11.30am-1.00pm)

Technology, Disorder and the End of Work¹

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Abstract

Technology opens a mythic field. It is often perceived as a mode of salvation, a set of procedures by which any problems can be solved or even a new humanity created. Cultures have been ranked in terms of a linear technological development. Alongside this vision there has been a long-standing tradition which sees technology as a form of damnation, as a way whereby humans are alienated from themselves, from spirit or soul, and from nature. In both cases, what is held to be special about technology is that it seems to 'end worlds', either through millennial 'advancement' and control, or through apocalypse or decay. Originally technology was to end work and produce leisure, nowadays technology seems devoted to the ends of work, to furthering the spread and demands of work. However, in extending and intensifying the orders of work, technology disrupts those orders. As a result many people's lives are embedded in confusion and uncertainty; they hope that technology will free them, but fear it will enslave them or lead them to disaster. Recognising these disjunctions should influence the ways we approach and analyse the 'information society'.

Keywords: 'Information society', disorder, technology, millennialism, apocalypse

¹ The project of which this work is part is supported by an ARC research fellowship

Introduction

This paper is a preliminary report of investigations into the interrelation of technology, work and disorder in Australia, based on the repeated observations that computer technology frequently produces disruption or fails, despite the aura of salvation it sometimes wears. The paper is primarily theoretical and stage setting, as it explores the mythology around technology in the contemporary West, while looking briefly at twenty-four, roughly hour-long, interviews with 10 women and 14 men who have experienced difficult software installations at various levels (business analysts, members of IT departments, software testers, project managers, and workers). A later paper will explore these interviews in greater depth so as to demonstrate the upheavals and confusions which seem common in the workplace, and which centre on information technology and the ongoing failures of management as a social form.

In this paper, I propose that technology resonates with a mythic field and, as such, initiates and expresses existential anxieties. In particular technology incarnates the counterpositionary myths of beneficial Millennium or destructive Apocalypse. Technology is also often seen to possess its own imperatives and its own life which is often inimical to humans, while at the same time promising unending wealth and prosperity. Mythically, in the West, technology always ends worlds or begins new worlds. Technology may gain these mythic properties because of its paradoxical role; while used to organise social life it also disorganises social life. This may cause problems in conceptualisation as Western thought has tended to separate order and disorder from each other as opposites, with order as good and disorder as bad, rather than seeing them as intertwined. Taking this paradoxical potential seriously, opens a perspective into the interrelation between order and disorder, or to what I have called the 'order/disorder complex'.

Through this complex, technology is tied a) to the failure of 'management' as a social directive, b) to the necessity of sites of informal resistance or counter-ordering so that organisations can continue to work, c) to the internal politics of organisations which overwhelm practicality or instrumentality, and d) to the failure of communication and modelling of work and other realities in these contexts. The project as a whole, aims to suggest a different way of looking at the 'Information Society' in which that society is not seen as being totally based upon 'rational' processes that generate accuracy, resilience, domination and technological success, but also on processes which generate inaccuracy, fragility, inadequacy and failure.

Information technology and disorder

The repeated failure of information technology (IT) is well known. Saran (2003) refers to a survey of 450 IT directors across the UK, Germany and France, of whom 73% had suffered major faults in their IT systems, 43% claimed poor software produced a substantial drop in staff productivity and 45% said the software had damaged the company's image among clients and prospective clients. Huber (2003) reports another survey

in which “54% of projects failed to deliver on the planned-for functionality”, 9% were abandoned and only 16% of the projects “hit all their targets (budget, schedule and scope/functionality)”. El-Emam and Koru (2008) report on two years of web surveys, claiming: “26 percent to 34 percent of IT projects fail”. These reports arise from surveys of people in IT and IT management, so perceptions of disruption and failure might be much higher if we factor in ordinary users.

Furthermore, in an organisation of any size, there may be a number of software upgrades, or new systems, being worked on at any one time. All the project managers we talked with were in charge of more than one project, which shows the ideological importance of modifying IT, even with the knowledge that it may be disruptive. One manager was personally in charge of eight separate projects and, as a whole, that organisation was engaged in about twenty significant IT modifications for that year. These may not have been geared to occur simultaneously, but in sequence, to avoid a massive ‘hit’ of disruptions, but no sooner have people dealt with one upgrade they have to deal with another, with the problems of all these ‘improvements’ interacting with each other in unexpected ways. When we put together the failure rates from the paragraph above together with this number of software upgrades, we might expect that the information workplace is continually on the verge of disruption and uncertainty, and that it is possible that the need for such constant improvement occurs because of the ongoing disruption produced by improvement. The process would not appear to be entirely ‘rational’ or well planned.

However the disruption is not just internal, but affects those who deal with organisations from the outside as well. Among the more recent publicly reported disruptions, we can instance the failure of the Bank of Queensland eftpos terminals at the start of 2010 (Cartwright 2010), the Qantas booking system which crashed in November 2009 and January 2010 (Vasek 2010), the Commonwealth Bank Netbank collapse of June-July 2009 (WAToday 2009), or the recent difficulties faced by the Australian Tax Office (Martin 2010). Not all difficulties reach the newspapers. When I began to write this paper my bank account was stopped without notice, isolating me from any funds, making me miss required payments. During the paper’s course my email was automatically ‘upgraded’ with several strange results. Similarly, those interviewed for this project report ongoing failure and disruption, as well as puzzlement over such problems. They described their reactions to computer failure in themselves and others, in terms which ranged over feelings of stupidity, anger, panic, indifference, and being overwhelmed. In most cases the reactions described were intense, and perhaps indicative of disruption of personal functioning, so we should expect that failure will be fraught, and surrounded with ‘irrational’ and forceful responses.

Defining disorder or failure is always difficult, or uncertain, and is often the subject of political struggle, serving differing functions for differing groups; especially when experience, competence, ‘ownership’, or blame is involved. Blame in particular can be used to scapegoat particular social categories, and restore ‘normality’. What one person regards as failure another may regard as mere inconvenience or even as a success; something that was clear in the interviews. In any case, software disruption can lead to the ongoing *political* disruption of work. However, technology does not only disrupt because of failure. Trouble can also arise because the IT, or other technological system, works too well, or its local success disorders other

systems. If fossil fuel engines had not been so successful then we would not have damaged our environment so badly. If IT did not make data collection so easy and efficient, then we could not be defined by our data trails and have our identities abducted so easily. IT is a major source of disruption, *because* of its success and ubiquity.

However, IT was not the only cause of disruption that was reported. The interviews imply that almost everyone in work was rendered confused and desperate by management actions and policies, which rarely seemed to be integrated into the tasks they had to perform, or to what they considered to be the realities of the workplace. Confusion at work, particularly in office work, seems to be a relative norm.

The recurrence of such failure and disruption means that these factors are a regular feature of social life, and hence part of that social life. They need explaining, factoring in, and taking seriously, without being thought of as irrelevance, a result of incompetence, a temporary aberration, or as evidence of a transitional state between two ordered realms in the past and future.

Technology and myth

Starting with myth is not meant to imply myth is 'prior' – although mythic imagination often predates technological innovation. It might be suggested that a dominant Western myth is that we have no myth, that we are essentially pragmatic and reasonable. However, technology, in the West in particular, is embroiled in myth in the Malinowskian sense of myth being a way of describing the world which is also a charter for action and a template for perceiving the world. Myth is a "living reality" (Malinowski 1926: 18ff.). Myth is not necessarily false, fantastical or 'supernaturally' based (however we define that), and what we recognise as history or science can also be 'myth'. There is no sharp distinction between a myth and any other impersonal narrative that is taken as true. A myth seems to be a matter of fact to those guided by it, a potentially shared basis for meaning. While myth grows out of social experience, and narrative exchange with others, it also directs our attention to, or perhaps creates, facets of the world and their apparent arrangement, so that a narrative may gain its 'rightness' from its mythic background. Myth provides the cosmology within which problems, and the ways to generate solutions, appear.

Depth psychology argues that myth plays a role in our psyches, shaping those psyches and expressing them (Walker 1995). Myths can express the three-way struggle of ego, unconscious processes, and the world, giving guidance for the likely socially acceptable paths of those processes, and providing compensations when the paths are not acceptable. Myths are 'metaphoric' or 'symbolic' ways of expressing what is otherwise inexpressible; as such they provide the axioms of discourse, and form an ongoing groping after the mystery of existence (Hughes 1993: 2ff.). When faced with new situations, as we often are with technology, we tend to think in terms of previously familiar events and stories, and thus think analogically, or symbolically. Our, often unexpressed, axioms are nearly always symbolic, in this sense, for the simple reason that they seem obvious and need no justification – as for example, in 19th Century physics, when scientists thought atoms were like

billiard balls, because hardness was an assumed property of the real; nowadays it is not so clear. However, the resonances of myth, while shared, and exchanged, can be shared with variation and in fragments. Myths do not have to be coherent or without contradiction either internally or with respect to other myths². They are frequently subject to argument, or reinterpretation, depending on the situation being faced, the aims of particular rhetoric and contestations over appropriate telling. However, it seems probable that a selection process occurs, so that symbols which get used again and again do so because they have 'pull' in recurrent situations, or help define those situations.

As attempts to deal with mysteries, myths will build up around problem areas, especially those conflicted areas which apparently solve problems while, simultaneously, generating problems. In the West, what we have defined as 'technology' is such a conflicted area, and 'work' is another.

Technological myth and society

Over the last two to three hundred years the Western world has come to be seen as a technological and pragmatic civilisation, and one of the major myths of this world has been that of technology as a prime driver of culture and society. The myth has arisen that the West has succeeded, and reached dominance through technology, and thus success comes through updating or upgrading technology. The implication is that those who fail this in competition will be superseded.

The force of this myth has led to cultures being ranked in terms of a linear technological development: Stone Age, Bronze Age, Iron Age, age of sail, industrial age, and to whatever age you think we are in now, nuclear, space, or information etc. Any number of theories relate social change to a particular development of technology such as irrigation (Wittfogel 1957), the stirrup (White 1966), writing or the printing press (Innis 1950), the steam engine, the automobile (Urry 2004), telecommunications and so on. Information society theory has tended to promote the view that information technology changes everything. The myth has been important politically, as when Lenin claimed that "Communism is Soviet power plus the electrification of the whole country" (1965: 516), and big businesses will insist their technology has to be up to date to survive competition. In sociology the modernisation thesis implied that the distribution of industrial technology, would inexorably lead everyone in the world to become like modern Americans, and hence that the world would become more or less uniform and 'democratic' (Epstein et al 2006). Whereas modernisation has normally been portrayed as a narrative of improvement, there is equally present a narrative of decline (is it good we all end up American?), both can be found during the whole period, emphasising that a myth usually occurs with a contradictory counter-position³.

2 As was argued at length by Levy-Bruhl. Levy-Bruhl's work is compromised by his failure to recognise that the 'irrationalities' he observed in 'primitive' societies were also present in his own. Towards the end of his life, rather than investigating the role of 'participation' and 'prelogicality' in the West, he decided that the uniform nature of humanity meant that people everywhere had to be 'rational', and this in the late 1930s (1975: 49).

3 Myths may need to be contradictory as representations of an unrepresentable and intertwined existence need to be paradoxical, as otherwise important representational features of that existence will be smoothed out, and the representations become inadequate and lose out to those that deal with the apparent contradictions.

Technology and ends of worlds

As technology is held to be a social determinant and is bound together with the mutual appearance of crisis and improvement, technology is easily attached to myths of apocalypse and millennium. These are central stories of the Christian world which focus on the ends of worlds and the potential for transformation. The *millennium* is the time of perfect rule before the last judgement, and the *apocalypse* the time of disaster and cataclysm before the millennium arrives. Millennium and apocalypse are often separated in their presentation, although being conjoined in the book of Revelations.

Technology is also related, through contrast, to Western conceptions of 'nature', or the Edenic state, as it is usually seen as artificial and not natural, despite the fact that animals and birds use tools. Mythically, technology is one of those things, like language, which is held to set us aside from the natural world. As such, it can also be ambivalently regarded – technology was developed after the fall and, according to the narrative of Genesis, primarily by the descendents of Cain. Such ambivalence can also be seen in the labels 'Promethean' or 'Faustian', or in the story of the tower of Babel, in which knowledge and technology, as well as being associated with achievement or civilisation, are also associated with the possibility of divine punishment or human hubris (Hulme 2009). The original Edenic state is usually seen as primordial and (apart from the fall) as potentially unchanging, something that must be restored, and thus in contrast with the constant change of technology or contemporary life. Often change itself is taken as evidence of inferiority; as 'true being', since Plato and Aristotle, has often been thought of as unchanging, or outside time (Eisendrath 2003). However attempts to impose stability and pristine purity on the Earth require the interruption of the flux of nature and thus can produce unexpected disruptions or failures (Merchant 2003). As Reynolds (1991) points out, it is relatively common for a technological modification of nature to require further technological modifications to counteract the problems produced by the earlier modifications.

In the millennium format, technology is perceived as a mode of salvation, a set of procedures by which any problems can be solved, a paradise formed on Earth, or even a new humanity created, or the body left behind. Some of this millennialism has passed into thinking about solutions to climate change such as making artificial carbon absorbing trees, or putting mirrors in space etc. It also seems common in managerial reactions to information technology, when technology can often seem to transcend people and be intrinsically good in itself. According to my interviews, and other sources, evaluation of technology often seems to be 'magical' in that there is no checking to see whether the new system is better than the old and, if so, *where* it is better than the old (Knox et al 2007). No person, when asked, reported any attempt by their management to see if the new system had actually improved work or made it easier, although (it is fair to say) given the often extreme differences between before and after, such improvement would be hard to evaluate. The guiding myths of technology and progress guarantee the value of the work, despite the reign of accountants and cost-benefit analysis elsewhere. Alongside the millennial vision, there has been a long-standing tradition which sees technology as a form of damnation; as a way whereby humans are alienated from themselves from spirit or soul, and from nature. This is a currently common attitude in people who begin their analysis of technology

with Heidegger (1977). In these tales technology leads to the end of the world as we know it, to another fall and hence to apocalypse.

This is not to say that Heidegger's analysis is without interesting or important points to make but essentially he is caught in the schema that the 'primordial' or "what was primally thought" (1977: 303) is deeper than the recently thought (rather than being equally 'unreal'), and that the technological is part of the poetic, but that the pure poetic is superior. He argues that both poetry and technology are connected to 'revealing' the truth about things, indeed originally *techne* applied to poetry (ibid: 315), but while poetry is a pure revealing, technology is a challenging (ibid: 296). The loss of this primordial resonance almost turns people into resources for the technology (ibid: 299-300), and "blocks the shining-forth and holding sway of truth... [and] the call of a more primal truth" (ibid: 309). It stops our purer response to nature; the Rhine as a source of electricity is no longer the same river as in Holderlin's poem (ibid: 297). This argument assumes the poet has no particular cause or point to make, no desire to direct the chaos of life; but poets have traditionally praised victors and patrons, celebrated home loyalties and even written philosophies; there is no necessary pure openness to 'truth' here either. Heidegger gives no evidence that poetry or culture is more primordial than technology; any acceptance of his points is granted by the power of our myths.

Within his framework Heidegger, is almost inevitably bound into the myths of Eden, millennium and apocalypse. Atomic energy "which can be unleashed either for destructive or for peaceful purposes", gets a mention and the whole of the second half of the text is entangled in "danger", "supreme danger", "threats", "monstrousness", "the very brink of a precipitous fall" and, on the other hand, "saving power". His focus becomes how to avoid the looming Apocalypse and how to reach Millennium, although as depth of thought is primordial, this is, for Heidegger, intertwined with a return to a poetic-artistic Eden; something perhaps demonstrated in his life, by his continual returns to a hut in the Black Forest (Sharr 2006).

More interestingly Heidegger seems to be arguing that the order and disorder of technology (and perhaps human process in general, once we move from the nostalgia for Eden) is tied together. His concept of "enframing" (*gestell* – 'frame', 'rack', 'trestle') could conceivably refer to a mode of ordering and categorisation. He distinguishes between 'setting in order', that involves care and attention to the thing being ordered, and ordering which only cares for the results or what is being extracted (1977: 296). Perhaps he makes a distinction between something being attended to and something being commanded (ibid: 297). With our technology, things are arranged for further ordering and the only things of value are those that can be ordered (ibid: 298). Technology, as we pursue it, stimulates a desire for 'our' order: "it banishes man into the kind of revealing that is an ordering" (ibid: 309), and sets us to "pursuing and promulgating nothing but what is revealed in ordering" (ibid: 307). "The will to mastery becomes all the more urgent the more technology threatens to slip from human control" (1977: 289). There is an implication that there is a world, and a world of human action, which can be disordered by human action, and that this might be endlessly compounding; the more we order through technology, demand, schematisation and simplification the more we disorder our world. However, another implication is that there is a millennial way of ordering which will solve our problems, and we can find it through Heidegger and the cultivation of primordial poesis. Heidegger also expresses a degree of am-

bivalence about technology as it opens the way to this return: “The closer we come to the danger, the more brightly do the ways into the saving power begin to shine” (ibid: 317).

In the early days of the internet the ambivalence between Millennium and Apocalypse was quite marked. On behalf of the Millennium, academics could pronounce that “the revolution launched by the introduction of the integrated circuit means the end of empire” (Dudley 1991: 304). Author and consultant John Brockman, with a reference to the life in machines of the sort that I will discuss later, wrote with apparent ambivalence that:

“With the Internet and the World Wide Web, we are creating a new expansion of ourselves in much the same way as Mary Shelley’s Dr. Frankenstein pieced together his creation... an emergent electronic beast of such proportions that we can only imagine its qualities, its dimensions”.

Although Brockman generally celebrated what he called “distributed networked intelligence” which was: the infinite oscillation of our collective conscious interacting with itself⁴, adding a fuller, richer dimension to what it means to be human. I am the Internet. I am the World Wide Web. I am information. I am *content* (Brockman 1997).

Brockman issued a book of interviews with well known people within the Internet or Computing world; the self styled “Digerati”, which promises great change. In it, Stuart Brand wrote that “The Net is a major social event. Culture’s got to change” and, “Something different will happen, and it’s too early to discern what” (Brand 1997: 24). David Bunnell added “It’s bound to have a radical impact and transform our societies” (Bunnell 1997: 32).

People such as Rupert Murdoch, Bill Gates and Newt Gingrich all claimed that because of the Internet the Capitalist millennium could arrive and bring freedom and joy to all (Murdoch 1994; Gates 1995: chp 8⁵; Gingrich 1995: 57). It is possible the ‘irrational exuberance’ of the dot.com boom, a few years later, was similarly fuelled by these millenarian expectations, and the further expectations that profit would be unlimited.

On the other hand, Marxists Hardt and Negri imply that the internet furthers communication between workers and creates collaboration and thus automatically undermines capitalism, leading to the millennium of the paradise of the Multitude. The internet and the resulting informational economy supposedly frees liberation movements of the necessity of becoming organised in hierarchies, or of having to impose order after the chaos of revolution (2004: 68-78) and thus revolutionary freedom will finally be possible. Millennium is what you choose it to be.

⁴ A phrase he liked enough to repeat in Brockman 2010

⁵ Gates’ chapter is quite complex, but he recognizes that “frictionless capitalism” is not compatible with ‘net anarchy’ and that for lack of friction to occur obstacles, like dissent, must be removed or confined to reserves.

The Apocalyptic counterposition is not far away. Other people warned of the dire consequences arising from computers and the Internet, although these people frequently wrote as if they were a rejected minority; already overwhelmed by the apocalyptic machines. Sven Birkerts prophesied the loss of Soul, the loss of richness, depth and duration of subjectivity, and the loss of complexity of language and history (1994: 127-31, 210ff.). Stephen Talbot (1995) wrote of a fatal scattering of the self, of decaying community, and of somnambulistic organisations bringing ecological catastrophe through the abnegation or abandonment of reality. Žižek warned that speed of contact with the foreign would induce disconnection from bodily neighbours, that overwhelming choice would lead to the impossibility of choice, and that the postulated universal community could exclude, even more directly, those who could not participate (1997: 154). Sardar wrote that:

Cyberspace with its techno-Utopian ideology is an instrument for distracting Western Society from its increasing spiritual poverty, utter meaninglessness and grinding misery of everyday lives. Prepare for holographic Slashers to break out of 'alt.sex.stories' and stalk the earth (1996: 39).

It seemed that many people were, and still are, prepared to proclaim the extraordinary world changing nature of IT. This change is widely either anticipated as the new millennium bringing new life, or feared as apocalyptic bringing the death of the soul.

Despite the power of the internet to attract myths, it is probable that the most common technological apocalypse stories centre on robots or computers gaining more intelligence than us and wiping us out, or there being nuclear war, genetic catastrophe and so on. Climate change becomes part of this apocalyptic narrative, while the millennium bug is an example of an expected apocalypse being averted. These stories are 'real' myths: they tell us of the possible. In both cases, self-powered technology moves to 'end worlds', either through millennial 'advancement' and increasing control, or through apocalypse or decay.

Technology as outside us, with its own imperatives

With the idea that technology is both outside nature and a driving force in society, we place technology external to ourselves. Even Bernard Stiegler, who argues that humanity and technology are inseparable, makes technology the driving force so that "techno-genesis structurally precedes socio-genesis" and technology is "humanity's very destiny" (2009: 2). This assertion's only persuasiveness is the mythic background. If humanity and technology are truly inseparable then it is only the myth of technology's separation from 'nature', which makes it obvious that one of them must be prior *at this moment*. If human 'being' is insufficient and demands technology, then why is not technical 'being' also insufficient? There is no true inseparability if the 'human' is usurped by the 'technological'; that is simply a reversal in keeping with the myth and its counterpositions.

The externality of technology is not inevitable. For example European alchemy proceeds by assuming

that there is no division between the technological work involving apparatus, the human sphere and, for want of a better term, the divine/spiritual sphere. All resonate with each other so that changes in one bring changes in the other. In this kind of vision, the techno-world is alive and living *with* us (not against us, or apart from us, or dead) (Marshall 2002)⁶.

Perhaps this Western sense of technology as an exterior driving force arises from the way technology has been used against people, to extend power over others, usually without consultation, militarily and through work⁷. Through our modes of compelling work, we arrive at the mix of factory with the workhouse and prison (Jennings 1985: 23, 48). Technology becomes a compulsion to labour and hence an extension of management. Before industrialisation, there was a sense that a person could make their own tools, and command those tools. During industrialisation, tools became owned and controlled by the company, and technology became complicated and separate to a degree which renders it impossible, for most people, to build or repair, themselves; especially if it constantly changes. Technology became a form of, or tool of, imperialism; used to conquer the human, the home country and the external world in the name of trade. In the 19th Century, industrialism could be portrayed as an incarnation of hell, most famously with Blake's 'Dark Satanic Mills', and a case could be made that Hell is the first machine: Pandemonium (ibid: 3-5). In this situation, technology is easily seen as having an inimical life of its own, to which human life becomes subject or subordinate, an appendage – so the person appears mechanised rather than the technology humanised. Humans become an estranged part of the machine. As external and imposed, technology becomes concretised as knowledge, perception, and authority; and thus by psychological compensation comes to represent ignorance, deception and subversion. Technology both enables and restricts, and hence the possibility it bears of becoming millennium or apocalypse.

Imposed and enforced technology is a recurring narrative in the interviews. People report building up informal networks so as to get the job done, to receive help with the system, and to make up for the computer's inability to do the work, only to have those networks disrupted by managerial action or by another upgrade. Those interviewed almost unanimously report a sense that they were not consulted about changes to the IT that they used, which then changed their jobs. Indeed changes in IT were often seen, by them, as ways of deskilling staff, increasing workloads, or cutting their hours or numbers. IT was a form of warfare. It was relatively frequently reported that when there was a change in management, or ownership, that new software would be implemented without any prior research to find out what people actually did. Software, in this case, might act as a symbolic imprimatur of the change in control and of the subjugation of the controlled. Some might call this apocalypse; others who see it as cutting costs and making work more efficient, as a potential millennium.

⁶ Alchemy also accepts chaos and disorder as forming a necessary part of the process at all levels, rather than attempting to make such disruptions marginal or suppressed – however, perhaps as a result of all these boundary crossings, it was almost impossible to teach alchemy and so it was easily superseded as a discourse by a more programmatic 'science' which did not recognise disorder.

⁷ In the early modern West, one source of technical ingenuity was the torture devices made for the Inquisition.

Even when there was research into gathering what are called ‘requirements’, (i.e. what the new system is required to do) people would say that these requirements were not implemented, or the requirements were gathered from the wrong people, usually the managers rather than the workers. As one person said “It wasn’t about them coming to [us], finding out what our needs were, what we could do. It was about us fitting with their software. There is this thin veil of consultation, but it’s meaningless. It’s absolutely meaningless”. As some IT workers pointed out, gathering requirements adds to people’s work, which may make writing the software more expensive, and so a case can always be made for not gathering them fully. Others stated that attempts to explain to management what was needed, or what was wrong with the system could be fatal to job security.

Managers or programmers of software would frequently recommend downplaying potential changes, so that people did not panic, however this would simply leave people feeling they could not trust management, and open further problems in communication and in representing the organisation with any accuracy. It was also frequently reported that as managers did not use the systems they often had no idea how bad they were, and people did not know how to tell them. On the other hand people reported their suspicions that sometimes new IT systems resulted from one department or manager attempting to extend their influence, without regard for the organisation’s working or the fact that different departments had different aims or requirements.

The interviews suggest that there is a permanent level of confusion, sense of hidden agendas, and failure of information transfer within the workplace. Instead of order and easy efficiency, offices were murky pools of resentful and bewildered chaos. Fear of job loss adds to the levels of resentment. In these conditions, suspicion and paranoia intensify because the question of whether someone is trying to get at you with their use of software, or their requests or complaints about software, continually arises. Software installation can trigger previous conflicts, or become a focus for them (cf. Marshall & Zowghi 2010), again disrupting the already disrupted patterns of work. Even if the workplace is relatively harmonious then friction can arise because different groups have different evaluations of the importance of different actions and processes which are incorporated into the IT system.

This sense of paranoia and incompatibility between groups is furthered by the widespread use of management and ordering techniques which seem incompatible with the work that is supposed to be being managed, or which produce a sense of disorder in people’s lives. This is not simply that individual managers are incompetent, but the whole system is skewed towards incompetence, and disorder. If management generally has restructuring mania (moving people around, reorganising them and their work), which is anecdotally common, then it will disturb the workers and the ways things are done in the workspace. Some people tell me that this happens every couple of years in their workplace, not only disrupting work, changing the focus from production to reorganisation, but that it rarely if ever produces any improvement in work conditions and processes – and even if it did, those improvements will be lost in the next restructure.

This ongoing failure of management to work might be the repressed of our society. As we assume that things and processes need more order, and that order is good, the idea that we cannot manage and pro-

duce order is terrifying. This terror is then displaced on to the technology that management celebrates, and often uses as the excuse for rearranging everything.

So while computer technology has sometimes been promoted as ending the world of work and producing leisure (millennium), nowadays that technology seems devoted to the ends of work, to furthering the spread and demands of work, to making work total, and making work, and leisure, both exist within the machine. It is almost no longer possible to leave work, as you are simply a mobile phone call or an email away, and the computer screen always makes work available to us. If technology seems actively hostile, it is because it symbolises the displaced and harsh face of the managerial and capitalist imperative; imperatives which are only rarely escaped and which seem part of contemporary existence.

Technology as alive

It is a recurrent feature of modern Western world ending stories that 'life energy' gets caught in technology, as we have seen in Brockman's metaphor of Dr. Frankenstein⁸. The robots become alive, nuclear power becomes a repository of the energies of the occult, and so on (Weart 1988)⁹. This life is then directed against the human, in some kind of apocalyptic battle.

With machines experienced as a form of domination, we could posit that as we become more passive in the face of their arrival, the machine grows more alive, as if life was leached off into the machine. It is their connection to the supposedly impersonal life of the markets, to which human life must be sacrificed and managed in order to survive, which gives the machine its own impersonal but living aura. This impersonality perhaps spills into a related myth in which the living machine has, as its hallmark, lack of 'feeling'. Similarly, as the human approaches the machine they also lose feeling. For example, the 1960s Cybermen in *Dr. Who*, whose human parts are gradually replaced with machine parts until they were no longer truly human but machine and without emotion. Their only motive seems to be to engage in conquest of the human world. In the more recent episodes, the emotions are not removed with the body, but suppressed technologically by a chip. Again technology is seen as against emotions, and hence against what seems to be human. From the other way around, in *Terminator II*, as the Schwarznegger Terminator robot becomes more human it learns emotions and, of course it comes to protect us from the machine apocalypse in the

⁸ According to Turkle several AI researchers at MIT come from families claiming to be descendants of Rabbi Leow who made the golem (1984: 260). For the association of electricity with life and divine power see Benz (1989).

⁹ Weart suggests the investigation of, and reaction to, nuclear energy was influenced both by the properties of reality and by a preexisting set of supposedly subordinate myths which resembled those around alchemy. Thus it became associated with transmutation of metals (1988: 5, 13, 38, 56-8), transformation of the body (ibid: 36-8, 50-5, 191), production of utopia (ibid: 10-2, 173, 211), spiritually potent or destructive rays (ibid: 36, 45-7), the light and flame of godhead (41, 101-2), the energy of life (ibid: 37), the destruction and rebirth of the world (Armageddon) (ibid: 17-8, 101-2, 138-9, 222, 402) and the uncovering of dangerous and forbidden secrets. A related myth was of the mad scientist who not only uncovered what 'man-was-never-meant-to-know', but also displayed the inability of 'rationality' to cope with reality. The scientist and the secret should be contained (ibid: 21, 24, 31, 122-4, 187).

first place so it is separated out from the other machines¹⁰.

Examples of the machine as intelligence without emotions are almost endless. In this process, the machine becomes the image of the rational 'mythless' person, whose emotions are secondary to their work. What is being recognised is that without emotions the technology (and hence the economy and work) cannot be placated or swayed by normal human techniques of persuasion. Our technology, and our workplace, has no pity. "Care? No, why should I care?", says the first Cyberman to speak on Dr. Who.

CYBERMAN 1: Our life span was getting shorter so our scientists and doctors devised spare parts for our bodies until we could be almost completely replaced.

POLLY: But... that means you're not like us. You're robots!

CYBERMAN 1: Our brains are just like yours except that certain weaknesses have been removed.

BARCLAY: Weaknesses? What weaknesses?

CYBERMAN 1: You call them emotions, do you not?

POLLY: But... that's terrible! You... you mean you wouldn't care about someone in pain?

CYBERMAN 1: There would be no need. We do not feel pain

(Pedler 1966).

No mercy is to be expected. *Star Trek*, has similar creatures in the Borg, which as well as being without emotions, reflect an American horror of collectivism, as through assimilation the human becomes a devoted drone, an impersonal slave of the group or later of the 'queen' – which may emphasise the loss of 'masculine' freedom. This horror of collectivism is not so marked in the British version where Cybermen are not individuals either, but no one seems to particularly care.

In a counterpositionary movement, the lack of emotions and irrationality which supposedly give the machines their aggression and domination, usually prove to be their downfall. They are not capable of leaps of logic or strategy; the hope is that their minds are not as flexible or creative as our own, and we can still win – indeed in these stories the humans nearly always win. But in the workplace we are also dealing with humans as well as machines, and perhaps the hope is not grounded.

In yet another variant of the myth of life energy in the machine, it can be posited that humans can be downloaded into the machines and thus gain immortality and freedom from the body. This story is common in science fiction but is not just found there. Marvin Minsky, Professor of Science at MIT, wrote "if it was possible, I would have my self downloaded", and "evolution seems to be leading us to a machine consciousness" (q Springer 1996: 26). Hans Moravec, director of the Mobile Robot Lab at Carnegie-Mellon University describes four imagined procedures for transferring the mind into a machine. In most of these methods the process of replication destroys the original, so essentially the human dies so that a copy (or

¹⁰ It is possible that the presence of emotions in the Schwarzneger's Terminator in *Terminator II*, is why people continually describe it as a cyborg, i.e. a modified human, when it is clearly meant to be a robot.

copies) of him or her can 'live'. The appeal of this idea is probably connected with the magical mechanisms of similarity and contagion as described by James Frazer in *The Golden Bough*. This version of the myth tends to ignore the fears about machines, although Moravec also concluded that we might be displaced by intelligent machines.

When technology represents an existential mystery, as when it seems to dictate or disturb life and what it is possible to do, or when its solutions produce further problems, then it will become the focus of myth. Symbolically within this apocalypse we are caught in something beyond ourselves and political action can become abrogated because it is seen as the nature of the technology, not the historical series of decisions, implementations and political victories, which causes the problem. Overwhelming and apparently unsolvable problems, such as destruction of the environment, or the pains of modern work, can appear inevitable.

Technology, order and disorder

In the course of this paper I have suggested that technology in the West and information technology in particular, open a mythic field. Technology is not an area of specific and dry 'rationality', but an area of hope and fear, bound together with apocalyptic and millennial myths. I have further suggested that the intertwining of technology with capitalism and conquest, and the ongoing failure of capitalist managerialism has had a significant effect on the way that technology has been thought about, in that it provides the basis for the intersection of technology as an ordering and disordering factor in people's lives, which is not experienced simply. This effect may be increased if people feel that order and disorder should be one thing or the other, binary opposites, rather than intertwined and self-disruptive.

In a subsequent paper, I will explore, in more depth, the technological disorder in its social rootedness, which has only been briefly hinted at here. In anticipation I will argue firstly, as Clastres (1987) suggests in another context, that if technology is a tool of domination, then 'disorder' arises from resistance. People try to subvert and disorganise technology, so as not to be organised by it or appear diminished by it, not to be immersed in it, or subject to it, to keep the social consubstantial with the personal. Given that technology is a form of organisation, it is likely to clash with existing orders, encounter both inertia and positive obstruction, or to be appropriated (where possible) for unintended personal, or sociable, usages.

The second cause of disorder arises through failure of humanly limited models of the world. Our models are rarely completely accurate and, as suggested in this paper, at least partially, mythical. There is no reason why people in power, or those who try to implement organisation through technology, should know more than others, about everything. Those near the top of hierarchies do not generally know what those at the bottom have to do to make the organisation work. Fear of punishment for disagreement, or rewards for agreeing with those above, mean that those lower in the hierarchy have no compelling reason to inform their superiors about the real state of affairs. In the other direction, the necessity of hiding managerial processes and weaknesses from those below, likewise hides what is really going on. Similar boundaries can exist between all kinds of groups, through secrecy, local idioms, tacit knowledge, misperceptions, fear and

so on. Indeed the models people have may be structured by the order of communication offered by their existing technology. The more rigorously these inaccurate models are applied, the more disordering they can become.

The information workplace is, then, not a place of accurate knowledge or exchange of information, or rational management, but of active misunderstanding, organisational chaos and informal recoveries and resistances. Rather than being built on trust as Giddens (1990) argues, it would seem that network society is based upon suspicion and paranoia – we cannot trust everyone, especially those who are not of our level or group in the organisation. We may ‘really’ be bound in long chains of interdependence, but it seems that our mythic consciousness tends to ignore, or deny, this.

The IT and managerial chaos described in this paper, leads us to look at Information Society theory, in terms not of the orders of society and of recognised working knowledge, but of it’s neglected, or repressed, others: the disorders of society, the ongoing failure of management and the actuality of knowledge being distorted, miscommunicated, ignored, or structured by myth, rivalry or survival. In the information society bad information drives out good, ordering generates disorder, and heavily restated ideology replaces the pragmatism it is supposed to express. In extending and intensifying the orders of work, technology disrupts those orders, so it might be suggested that as the networks of capitalism become all-encompassing they are being made more precarious and disruptive. As a result many people’s lives are embedded in confusion and uncertainty; they hope that technology will free them, but fear it will enslave them or lead them to disaster. They both embrace and resist technology, attempt to order by it and disorder it, and are disordered by it. They are caught in an order/disorder complex with no clear exit. This fosters the sense of being caught in some kind of trajectory or fate, which threatens life, regularity and so on. It also points out that the *ends* of society, the aims which it pursues, may directly lead to the disruption of that society and its possible *ending*.

People may say these consequences are trite compared to the endless destruction faced in despoiled or conquered societies, and that may be true, but it is real never the less. The “security, comfort and optimism” of the West is part of the millennial side of the myth, but true only for a relatively short time for most people; any security is intimately tied in with the complex of destruction and uncertainty. However, if anthropology is to deal with ends of worlds, then it cannot keep making it normal to ignore our own society, and the ways it functions in our own lives.

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