9 Learning from Luddites

Media labour, technology and life below the line

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> The central event of the 20th century is the overthrow of matter. In technology, economics, and the politics of nations, wealth – in the form of physical resources – has been losing value and significance. The powers of mind are everywhere ascendant over the brute force of things – *A Magna Carta for the Information Age*.
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> (Dyson *et al*. 1994)

A focus on media labour may seem odd given the dominant discourse on culture, which elevates it above monetary exchange and employment. On this account, making culture is so universal yet special, so human yet exciting, so inevitable yet pleasurable, that it transcends worldly issues of alienation or reward. Culture is inalienable and semi-sacred in both the amateur Arnoldian anthropology of the 19th century and the credulous chorine cybertarianism of today.

The supposed universality of culture is being augmented by the comparatively cheap and easy access to making and distributing meaning afforded by contemporary technologies and genres. They are thought to have eroded the one-way hold on culture that saw a small segment of the world as producers and the larger segment as audiences. The result is said to be a democratized media, higher skill levels, more sovereign consumers, and powerful challenges to old patterns of expertise and institutional authority. Traditional relationships are reversed as innovative technologies and norms of communication formalize what was always the case informally – that readers matter to authors and ultimately determine semiosis. The term 'disintermediation' describes the impact of technologies that putatively allow us all to become simultaneously cultural consumers and producers ('prosumers') without the approval of gatekeepers (Banks and Humphreys 2008; Banks and Deuze 2009; Graham 2008; Ritzer and Jurgenson 2010).

This chapter steps away from such heady fantasies. Preferring the mundane world of the everyday to spectacular utopias of transcendence, we analyse life for workers 'below the line' – i.e. people who are categorized underneath writers, producers, executives, directors, actors and managers in the accounting hierarchies of the *bourgeois* media, specifically Hollywood (the term refers

to the likes of drivers, caterers, electricians, carpenters, secretaries and interns).

However, we extend the concept beyond the film industry. Doing so takes us both backwards and forwards in the life cycle of the media to include work that literally makes and unmakes media technologies as material entities: mining metals, assembling parts and disposing of detritus. The workers involved in these processes are barely visible in the double-entry bookkeeping that decides profit and loss for a major motion picture studio or mobile (cell) phone corporation. Before undertaking this project, though, we should ask why these people are absent from the discourse of the media.

The cognitariat and consciousness

Today's world of disorganized capitalism or post-Fordism includes a cognitariat of highly educated, occupationally insecure media producers. Classified above the line, they are voluble and newsworthy. The cognitariat was identified and named a quarter of a century ago by the lapsed-leftist Reaganite Alvin Toffler (1983), author of numerous technocentric works and signatory to the cybertarian *Magna Carta* of the mid-1990s cited above. Toffler wandered the same conceptual Cold War corridors of futurism as former National Security Advisor Zbigniew Brzezinski (1969), American Academy of Arts and Sciences prelate Daniel Bell (1977), and professional anti-Marxist Ithiel de Sola Pool (1983). They predicted that information and communication technologies would remove grubby manufacturing from the global North to the South and consolidate US cultural and technical power, provided that the blandishments of socialism and negative reactions to global business did not create class struggle at home or abroad.

The concept of the cognitariat has since been redisposed on the left by Antonio Negri (2007) and his *appassionati*. Negri uses it to describe people mired in casualized labour with heady qualifications who live at the complex interstices of capital, education and government. This college-trained cognitariat plays key roles in the production and circulation of goods and services, creating and coordinating culture as musicians, directors, writers, journalists, sound engineers, editors, cinematographers, graphic designers and so on. The cognitariat also features audiences and consumers, who pay for content, interpret it and elide barriers of entry to media production through their anointment as prosumers. These groups operate within institutional contexts: private bureaucracies, controlling investment, production and distribution across the media; public bureaucracies, offering what capitalism cannot while comporting themselves in an ever-more commercial manner; small businesses, run by charismatic individuals; non-governmental organizations, of whatever political stripe; and networks, fluid associations formed to undertake specific projects. Cognitarians typically engage in dreamy self-exploitation and autonomous identity formation. They announce themselves as autotelic subjects: joining a gentrified poor dedicated to the life of the mind fulfils them

and may even proffer a labour market of plenty (Gorz 2004; Ross 2009; Neff *et al*. 2005).

The prevailing ideology of capitalist futurism that underpins this cognitariat requires correction. As Marcuse (1941) predicted 70 years ago, far from liberating all and sundry, innovations in communication technology have intensified managerial coordination. Writing in this neo-Marxist tradition, Herbert I. Schiller recast futurism as an 'infrastructure of socialization' that synchronizes 'business cultures', organizational models, 'institutional networks', and modes of communication and cultural production in the interests of capital (Schiller 1976: 8–9, 16).

Such critical analyses are far from dominant. Marketers, censors, critics, pundits, cognitarians, psychologists and activists obscure the view by focusing on consciousness. The latest merchants of this trade include Negri and his *anglo-parlante* amanuensis Michael Hardt. Mirroring the Cold War futurists, they developed the idea of immaterial labour to describe the tendency to exchange information, knowledge and emotion through computers in ways that are abstracted from physical work (Hardt and Negri 2001: 290–92).

Such an approach excludes crucial cultural occupations. Consider the all-too-material health-and-safety risks endured by camera operators, stunt people, models, singers, transport captains, set carpenters, mobile phone testers, caterers and computer *habitués*. Beyond social and cultural critique, more important discourses fall prey to similar limits and temptations. For example, the Entertainment & Leisure Software Publishers Association (2004) celebrates women and video games, ignoring women's part in their manufacture and disposal. Britain's report on harm to children from games (Department for Children, Schools and Families and Department for Culture, Media and Sport 2008) neglects children whose forced labour makes and deconstructs them. A study prepared for capital and the state entitled *Working in Australia's Digital Games Industry* does not refer to mining rare earth metals, making games, or handling electronic waste – all of which should fall under 'working in Australia's digital games industry' (Australian Research Council Centre of Excellence for Creative Industries and Innovation *et al*. 2011). Such research privileges the consciousness of play and the productivity of industry. Materiality is forgotten, as if it were not part of feelings, thoughts, experiences, careers – or money, oddly. By and large, the people who actually make media technologies are therefore excluded from the dominant discourses of high technology. It is as if telecommunications, mobile phones, tablets, televisions, cameras, computers and so on sprang magically from a green meritocracy of creativity, with by-products of code, not smoke.

The dirty division of labour

The disappearance of physical labour from such myths is an illusionist effect of the kind that Marx noted 150 years ago: a 'Fetishism which attaches itself to the products of labour' once they are in the hands of consumers, who lust

after objects as if they were 'independent beings' (Marx 1987: 77). Dirty work is secreted within the clean machines that others use to relax. Consumers are preoccupied with peripherals, power and pace, but unaware of the conditions of existence of these possessions and pleasures. Their peculiar enchantment has a totemic, quasi-sacred power: a technological sublime of virtuality, volume and novelty (Nye 1994, 2006, 2007; Edgerton 2007; Winston 2007). To disrupt that technological sublime, we emphasize media technology's life cycle, from production to disposal.

The failure to address life below the line is a consequence of the fetishization of consciousness as the core of culture. For consciousness is merely one phase in a lengthy material process which, thankfully, has been investigated by political economists, workers, journalists and environmental scientists (Mayer 2011; Grossman 2006; Reygadas 2002; Cowie 2001; Clark 1997; Kalm 2001; Nnorom and Osibanjo 2008). Consider the British trade union Unite's path-breaking *How Green is My Workplace? A Guide for Unite Members and Representatives in the Electrical Engineering, Electronics and IT Sector* (2008). We find these approaches challenging and innovative. Among the workers they address who labour below the line, we are exercised by people who are neither classed as the cognitariat nor identified with the Zeitgeist, but on whom the cognitariat silently and ignorantly depend.

Unite's report helps us to resist the cybertarian technological sublime, whose blandishments animate chorines and advocates of the creative industries, the newer media, prosumption and the like. It nudges us in the direction of less fashionable, more venerable ideas: ideas that are sceptical and resistive rather than credulous and adoring. This recalls C.P. Snow's insistence that in accounting for the 'scientific revolution', we concentrate on people 'lost in the great anonymous sludge of history', where life, he said (troping Hobbes) 'has always been nasty, brutish and short' (Snow 1987: 26–27, 42).

Our approach is predicated on a deep regard for workers and the Earth and a profound disregard for technological hype. Drawing on supply-chain research to comprehend the global scale and inter-sectoral linkages of work, we examine the media's ecological context. Where better to do so than in the company of the much-maligned Luddites, who have passed into technophilic lore as mindless opponents of progress? Their name is used today to disparage workers who are suspicious of technology's capacity to induce job losses and deskilling, but it signifies something much more interesting and compelling than such shibboleths admit.

The Luddites were a social movement of textile labourers in the early 19th century who fought against the machinery and social relations of the emergent Industrial Revolution. They drew on the example of Snow's fellow-Leicesterian Ned Ludd from the previous century (and anticipated the antics of Pete Townsend, Jimi Hendrix and hackers in the next). They recognized that capitalists, who did nothing productive, owned machines that controlled workers. However, the Luddites were also protesting well-established technology, because it had led to disemployment over two centuries. (*À propos*, Lord

Byron sought the death penalty for opponents of new machinery in his maiden speech in the Lords, just months after summering with the Shelleys while Mary was writing *Frankenstein*, the first Luddite piece of science fiction.) These workers realized that technology could control their labour, spy on them, or shift their jobs elsewhere (Pynchon 1984). We'll examine very-far-below-the-line media labour as per their analyses and protests.

We are also animated by research done over the last three decades under the rubrics of the New International Division of Labour (NIDL) and the New International Division of Cultural Labour (NICL). The original international division of labour kept costs down through the formal and informal slavery of imperialism and colonialism, importing raw materials and manufacturing objects from them in the metropole. Action by the working class at the centre redistributed income via the emergence of a labour aristocracy that benefited from exploitation of the periphery. In response to such redistribution, capital inaugurated a new division of labour. It exported production to the global South, where young women workers were deemed more pliant than their masculine and metropolitan competitors. Developing markets and the shift from the spatial *sen*sitivities of electrics to the spatial *in*sensitivities of electronics further encouraged businesses to go beyond treating countries in the global South as suppliers of raw materials to look on them as shadow-setters of the price of work, competing for employment among themselves and with the global North. As production split across continents, the prior division of the globe into a small number of empires and satellites and a majority of underdeveloped countries was compromised. Folker Fröbel and his collaborators christened this trend the NIDL (Fröbel *et al*. 1980; Anderson *et al*. 1987). This model now applies to culture. The NICL, more specific than the NIDL in its focus on the production of meaning, has been elucidated in numerous research projects covering sport, cinema, television drama and technology (Miller *et al*. 2001; Miller *et al*. 2005; Conor 2011; Lobato 2008; Deuze 2007; Day 2005; Elmer and Gasher 2005; Christopherson 2006).

Culture involves manufacturing as well as art, text and performance. Ever since the development of print, the media have drawn upon, created and emitted dangerous substances, generating multi-generational risks for ecosystems and workers. For example, print labour past and present must contend with poisonous solvents, inks, fumes, dust and tainted wastewater. Similar conditions have affected workers in film-stock manufacture, where cotton dust adds the additional risk of contracting brown lung or byssinosis. Manufacturing and installing batteries exposes employees to lead and other pathogens, fatally damaging the lungs, skin and nervous system. Such illnesses have made battery workers the group most at risk of lead poisoning in the USA. The use of plastics to create media technologies can cause brain, liver, kidney and stomach cancer, while disposing of them releases carcinogenic dioxin and hydrochloric acid into the environment. There is growing concern about low-level radiation emitted by televisions, computers, electronic games, mobile phones, laptops, telecommunication and electrical towers, and power lines.

Bio-thermal risks confront workers exposed to media and telecommunications equipment as well as high-rise office workers close to transmission antennae (Maxwell and Miller 2012).

In the late 1970s, big media firms departed factories in the global North for sweatshops in developing countries; by the 1990s, electronic waste from their overhyped, badly engineered products was streaming into salvage yards, a new terminus in the life cycle of high-tech wonders. The NIDL has globalized such problems, and not only for those directly involved: the habitats, flight paths and lives of the world's original and most able globalizers – birds – are endangered by telecommunications towers, and plastic flotsam accumulating in the open waters of the North Pacific, the North Atlantic and the Indian Oceans threatens aquatic life because it breaks down into fragments but cannot be absorbed into the Earth (ocean.si.edu/ocean-news/ocean-trash-plaguing-our-sea; Maxwell and Miller 2012).

Media brands

Such major media brands as Apple, Dell, Hewlett Packard (HP), IBM, Kodak and Sony are core players in the NIDL. These firms are original equipment manufacturers, or OEMs (Lüthje 2006). Before media technologies appear as OEM brands in stores near you (whether physically or virtually) they travel along supply chains to sub-contractors. Mines supply metals to the foundries and factories that make parts for assembly, packaging and so on. In 2008, the proportion of the world's metals going into media technologies was 36% of tin, 25% of cobalt, 15% of palladium, 15% of silver, 9% of gold, 2% of copper and 1% of aluminium (Grossman 2006: 29–33; GeSI and EICC 2008: iii, 24–26, 34–36).

Tracking the metals supply chain is complicated. Many workers are in artisanal and small-scale mining (ASM), a notoriously harsh, low-tech, informal and poverty-driven sector. The International Labour Organization (2010) estimates that while there are upwards of 13 million workers in ASM worldwide, the number involved is closer to 200 million if we include a large population whose jobs depend on it (porters, buyers, transporters, smugglers, officials, exporters and so on).

ASM is concentrated in Africa, Asia and Latin America, where perhaps 1 million children labour in mines (GeSI and EICC 2008: 56). In the Democratic Republic of Congo, which has one-third of the world's columbite-tantalite (coltan), over 90% of eastern mines are controlled by militia which buy weapons with the profits. They threaten, intimidate, murder, rape and mutilate enslaved women and children who work for them. More than 5 million people have perished in the country's civil war over the past decade. Congolese 'conflict' minerals such as coltan are smelted in China, then sold on the international commodities market as tantalum, a core component in the capacitors of telephones, computers, games and media-production equipment. Responding to this state of affairs, the United Nations (UN) Security Council

set up a Panel of Experts and the US Senate passed the S.891 Congo Conflict Minerals Act of 2009 (Global Witness 2009; Montague 2002; Ma 2009; United Nations 2002).

Obtaining information about making the media is notoriously difficult even when OEMs claim to be evaluating occupational health and safety and wages among their sub-contractors. OEM audits frequently fail to assess segments of the supply chain where thousands of labour-intensive firms create resistors, capacitors, cables, switches, microchips, unfinished circuit boards, wires, connectors, power supplies, clips, screws and so on. Part of this activity is internalized within large factories, where it can potentially be monitored, but a significant amount is done in private homes as piece work (Good Electronics *et al.* 2009: 51). Inconsistencies in OEM audits couples with a lack of sociological and historical understanding of contract manufacturing to leave the public misinformed. For example, internal audits disclose the names of HP's suppliers, but not that Apple petitioned the US Federal Communications Commission to hide a governmental review of the iPad, which would have revealed how the company exploits multinational labour (see Apple's letter to the Commission BCG-E2381A).

Apple produces annual *Supplier Responsibility* reports (such as Apple 2009, 2010, 2011, 2012a), but does not name sub-contractors that break the law or ignore its guidelines. The first time the corporation even listed suppliers was in a supplement to its 2012 *Supplier Responsibility* report (Apple 2012b). Investigations into Apple's Chinese suppliers show that it is well aware of their harmful and illegal practices. Examples include chemical (n-hexane) poisoning of 137 workers at Lian Jian Technology Company (owned by the Taiwan-based firm Wintek, Lian Jian is an iPhone supplier with a factory in the eastern Chinese city of Suzhou). N-hexane damages the peripheral nervous system, which numbs the limbs and induces chronic weakness, fatigue and hypersensitivity to heat and cold. In 2010, workers were poisoned while degreasing the Apple logo with n-hexane at the Yuhan Photoelectric Technology (Suzhuo) Company and the Yun Heng Hardware & Electrical factory. Neither firm appears on Apple's list of suppliers, but they are among dozens of suspected Apple contractors harming workers and surrounding communities in China, according to the Beijing-based Institute of Public and Environmental Affairs (2011: 8–18).

Until 2009, Apple had no plans to protect workers (who work in at least four different countries) from mercury, lead and flame retardants. The company began to green its business model after sustained pressure from Greenpeace and other non-governmental watchdogs (Nimpuno *et al.* 2009). However, it barely commented on revelations about the searing conditions behind 15 suicides in 2010–11 at the Taiwan-headquartered Foxconn's Chinese factory, which makes iPhones and iPads. Foxconn boasts close to 1 million employees across China and undertakes almost half the world's electronics manufacturing. It uses military-style discipline, characterized by verbal and physical abuse (many line supervisors are former Taiwanese army

officers). When the iPad was launched, protestors in Hong Kong responded to the deaths by burning photographs of iPhones (Maxwell and Miller 2012).

For 'image-conscious companies with which Foxconn does business … the suicides were a public-relations nightmare and a challenge to offshoring strategies essential to their bottom lines' (Balfour and Culpan 2010). Apple finally responded to the crisis in its 2011 supply-chain audit. Admitting to the poisonings at the Lian Jian factory and assorted violations of codes of conduct, including employment of underage girls by other sub-contractors, it welcomed changes at Foxconn (improved wages, safety measures and counselling). However, while Apple ordered some firms to halt dangerous and illegal practices, its representatives did not meet affected workers or rehabilitate them. The 2012 report on suppliers' compliance again showcases Apple's anxiety about violations (audits allegedly increased 80% over the previous year) and its remediation efforts (terminating contracts of repeat offenders, hiring new oversight staff and consultants, undertaking more clean-ups, improving worker education, adding protective gear, etc.). Nevertheless, the report suffers from corporate *politesse*, refusing to name more than a few well-known offenders across the company's supply chain (Barboza 2011; Apple 2011, 2012a, 2012b).

The Foxconn suicides index the brutality of combining modern means of production with the mass mobilization of rural Chinese youth (by some measures, the largest internal migration in history). They are also tragic reminders of the malicious managerialism that characterizes the global supply chain and follow a pattern of suicide clusters at moments of industrial takeoff that was first noted 200 years ago in Europe (Balfour and Culpan 2010; Institute of Public and Environmental Affairs 2011). This is the dark side of a NIDL that typically contributes 15% to China's gross domestic product (GDP) (Nagy and Qiang 2010: 137), when post-Fordist factory systems meet OEM demands for rapid innovation and just-in-time production. They reveal 'the human cost that can come with the low-cost manufacturing US tech companies demand' (Wong *et al.* 2010: 36).

This inhumane system removes young people from the fun, family, friendship and free association that might help them adjust to high-tech, high-speed, high-security compounds. They are not even permitted to talk to one another on the assembly line (Balfour and Culpan 2010; Institute of Public and Environmental Affairs 2011). Before the suicide era, one of us sought, unsuccessfully, to visit media-technology factories in south-eastern China. He was able to spend time with young women on a rare excursion beyond the gated communities where they were sequestered. Obliged to live where they worked (not exactly as per the cognitariat's live-work downtown lofts), they were permitted half a day of leisure each week outside the compounds. Much of that time was spent walking several kilometres to meet friends from their north-western regions of origin. They had been separated to prevent worker solidarity.

This supply chain manufactures media technologies, brings them to the desks and palms of eager cognitarians, and removes them once their built-in obsolescence has been reached (Cox 2009: 21; Maxwell and Miller 2012). Ned Ludd and his followers have much to offer us in understanding it. Concepts such as knowledge workers, immaterial labour, creative industries, or cognitarians do not explain the lives of Foxconn workers and millions more like them. Their wages are at or below the minimum allowed by law, their overtime exceeds legal limits (and is often not paid), and their lives are managed by a totalitarian polity and company. The pressure to manufacture the first iPads was so great that for six months employees were required to work 12 hours a day, seven days a week, with no weekend overtime premium and a rest day every 13 (Students & Scholars Against Corporate Misbehaviour 2010: 7).

There is some spontaneous labour solidarity and agitation – such as Foxconn employees in Mexico supporting their Chinese counterparts – and Foxconn's Indian facility in Chennai, which creates phones for Nokia, saw the government suspend operations at the plant after workers were overcome by nausea and giddiness. Then the company and the state of Tamil Nadu imprisoned trade union leaders following a major demonstration: over 1,000 workers picketed for the right to negotiate with management through a union (Maxwell and Miller 2012).

However, low levels of unionization in the global supply chain of media technology severely hamper action that could empower labour organizers, environmental activists and industry auditors to improve working conditions and eliminate environmental hazards (Ferus-Comelo 2008: 157; CEREAL 2009; Cheng *et al*. 2011). The political-economic arrangements that militate against unionization also make it difficult to undertake reliable and representative epidemiological and qualitative analyses of workers' exposure to toxic materials and other occupational hazards (McKercher and Mosco 2007; Mosco and McKercher 2009; Mosco *et al.* 2010).

Conclusion

The NIDL is constantly changing. The late 20th century saw poor regions making 'low-value' parts of a device and richer regions producing 'high-value' research and development. That imbalance is largely intact, but the rapid pace and expansion of sub-contracting, and China's desire to emerge from a dirty, demanding dependence on mass manufacturing to a clean, lazy reliance on intellectual property, make stark distinctions of this kind increasingly unreliable as guides to research and activism (Bottini *et al*. 2007; van Liemt 2007: 8; Carrillo and Zárate 2009: 14).

An informed approach to cultural labour must encompass these transformations in the context of environmental and social justice, the labour process and a global appreciation of the life of commodities. Being stuck on questions of consciousness – whether the impact on children of watching television or

the experience of cognitarians designing games – can imperil this focus. Media effects and exploitation are important issues, but they must be redefined and remapped to address manufacturing and disposal of the media as well as consuming them. Otherwise, the technological sublime of capitalist futurists, cybertarian fellow travellers, cunning corporations and credulous cognitarians will disparage Luddism and overdetermine our analysis.