

COGNITIVE CAPITALISM AND THE CONTESTED CAMPUS

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- + The advent of 'Academia Inc.', *aka* 'Corporate U', is no longer an ominous prospect but an accomplished fact. Over the last twenty-five years, the universities of advanced capitalism have been metamorphosed, the shell of the ivory tower broken, and higher education firmly entrained to market-driven economic growth - in particular, to the development of high-technology industries. Universities are now frankly conceived and funded by policy elites as research facilities and training grounds for the creation of the new intellectual properties and technocultural subjectivities necessary to a post-Fordist accumulation regime. Academic traditionalists and faculty activists alike have clearly identified the dangers of this development: while the formal liberal democratic protections of academic autonomy - from tenure to civil rights guarantees - remain in place, opportunities for the practical exercise of such freedoms contract, as programme funding, research grants and curricula structuring are determined by their utility to the knowledge-for-profit economy (Newson & Buchbinder 1988; Aronowitz 2000; Ruch 2001; Slaughter 1999).

Warranted as such condemnations are, they often, however, overlook an obverse aspect of Academia Inc., a verso of which their critiques are actually symptomatic. For recent years have seen the emergence within universities of new movements and modes of struggles *against* marketisation, provoked by cognitive capital's expropriation of the university, mobilising the very constituencies of students and faculty commercialisation has summoned into being, and reappropriating

the same technologies - especially digital networks - for which Academia Inc. has been an incubator. Continuing a discussion of these ambivalent dynamics begun several years ago in my *Cyber-Marx*, and recently independently renewed by Tiziana Terranova and Marc Bousquet, this essay examines the changing configuration of academia through the lens of some theoretical categories of autonomist Marxism: 'general intellect', 'cognitive capitalism', 'immaterial labour', 'biopower' and 'multitude' (Dyer-Witheford 1999; Bousquet & Terranova 2004). Its analysis is inevitably coloured by my situation as a professor of information and media studies in a mid-sized Canadian university, but I hope to extrapolate general tendencies relevant to a European as well as a North American context; I say 'hope' in all senses of the term, since my ultimate argument is that the success of business in subsuming universities paradoxically opens the campus to intensified confrontation between cognitive capitalism and the emergent forces of what I term 'species-being' movements.

Managing General Intellect

'General intellect' is a category given recent currency by a group of theorists including Antonio Negri, Paolo Virno, Michael Hardt, Maurizio Lazzarato, and Jean Paul Vincent associated in the 1990s with the Parisian journal *Futur Antérieur* - although many of their ideas only became widely known through Hardt and Negri's later *Empire* (2000).¹ The *Futur Antérieur* group derived the concept from Marx, who introduces it in the *Grundrisse* of 1857. Here he prophesies that at a certain moment in capitalism's future the creation of wealth will come to depend not on direct expenditure of labour time but on the 'development of the general powers of the human head'; 'general social knowledge'; 'social intellect'; or, in a striking metaphor, 'the general productive forces of the social brain' (1973: 694, 705, 706, 709). The emergence of 'general intellect' is signalled by the increasing importance of machinery - 'fixed capital' - and in particular by the salience of both automation and transport and communication networks.

Fragmentary as Marx's observations on general intellect were, *Futur Antérieur*

saw in them a prefigurative glimpse of today's 'post-Fordism' or 'information capitalism', with its production teams, innovation milieux and corporate research consortia yielding the 'fixed capital' of robotic factories, genetic engineering and global computer networks. But if this is so, what happens to class conflict when capital reaches the era of general intellect? Marx's dialectical prediction was that technologies of automation and communication, by reducing direct labour-time and socialising production, would inexorably render wage labour and private ownership obsolete, so that 'capital... works towards its own dissolution' (1973: 700). Things hardly seem so simple today. On the contrary, high technology and globalisation appears, at least at first sight, to have bought an unprecedented triumph to the world market, and disarray or extinction to its revolutionary opposition.

The critical issue, *Futur Antérieur* suggested, was not just the accumulation of technology - the 'fixed capital' of advanced machines that Marx had focused on. Rather, it is the variable potential of the human subjectivity that continues to be vital - though often in indirect and mediated ways - for the creation and operation of this apparatus. This subjective element they variously term 'mass intellect' or 'immaterial labour'. It is the human 'know-how' - technical, cultural, linguistic, and ethical - that supports the operation of the high-tech economy, especially evident in the communicational and aesthetic aspects of high-tech commodity production. Negri describes 'mass intellectuality' as the activity of a 'post-Fordist proletariat',

'... increasingly directly involved in computer-related, communicative and formative work... shot through and constituted by the continuous interweaving of technoscientific activity and the hard work of production of commodities, by the territoriality of the networks within which this interweaving is distributed, by the increasingly intimate combination of the recomposition of times of labour and of forms of life' (1994: 89).

The crucial question is how far capital can contain 'this plural, multiform constantly mutating intelligence' within its structures (1993: 121; *my trans.*).

Capital, Vincent observes, ‘appears to domesticate general intellect without too much difficulty’ (1993: 121). But this absorption demands an extraordinary exercise of ‘supervision and surveillance’, involving ‘complex procedures of attributing rights to know and/or rights of access to knowledge which are at the same time procedures of exclusion’.

‘Good “management” of the processes of knowledge consists of polarising them, of producing success and failure, of integrating legitimating knowledges and disqualifying illegitimate knowledges, that is, ones contrary to the reproduction of capital. It needs individuals who know what they are doing, but only up to a certain point. Capitalist “management” and a whole series of institutions (particularly of education) are trying to limit the usage of knowledges produced and transmitted. In the name of profitability and immediate results, they are prohibiting connections and relationships that could profoundly modify the structure of the field of knowledge.’ (Vincent 1993: 123)

The university is the crucial arena both for this management of general intellect, and for its disruption.

Cognitive Capitalism

Let us call the commercial appropriation of general intellect ‘cognitive capitalism’.² The absorption of universities into cognitive capitalism has not been a smooth path, but the outcome of a cycle of struggles. Its origins lie in the post-war expansion of universities to provide the expanding strata of managers, technocrats and scientists required by high Fordist capitalism. The influx of these student cadres initiated the transition from the ‘ivory tower’ model to the functional ‘multiversity’, a model that is in many ways the forerunner of today’s Corporate U. The transition, however, was traumatic. From Paris to California the ‘1968’ generation of students, the first mass intake given the time and space of higher education to reflect on their life trajectory, defected from the cruelties and conformities of the industrial-military complex they were meant to serve. Their insurgencies in turn became a vital node in a circulation of social unrest that linked the mass workers of industrial factories, the emergence of new social

movements, guerrilla wars in Vietnam and elsewhere.

This tumult thrust capital on a yet faster flight into the future. Corporations went ‘cognitive’ in the 1960s and 70s not just because computers and biotech innovations were available, but also because high technology restructuring offered a weapon against the massive unrest that beset industrial, Fordist capitalism - whether by automating unruly factories, networking outsourced global production costs or green revolutionising the sites of peasant struggle. But making the shift from industrial to cognitive capital - or from Fordism to post-Fordism - required pacifying and restructuring academia. After the immediate discipline of police action, shootings and academic purges, the neoliberal response was radical reorganisation.

This reorganisation dovetailed two sets of interests: those of the state and the corporate sector. Governments beset by the ‘fiscal crisis of the state’ were keen to cut costs; business, on the other hand, wanted more control in the troublesome, but increasingly valuable, matter of education (O’Connor 1973). Over the late 1970s and 1980s rates of funding for university education in most capitalist economies were cut. Tuition fees and student debt were sharply raised. Programmes deemed subversive or - like many arts and humanities departments - simply of no use to industry were cut. These measures, alongside a climbing unemployment rate and general economic austerity, chilled student protest.

The conditions were thus set for an integration of universities and high-technology ‘knowledge industries’. Basic research was sacrificed to applied programmes. Research parks, private sector liaisons, consultancies and cross-appointments with industry, and academic-corporate consortiums burgeoned. Moneys subtracted from base operating budgets were then re-injected back into programmes of direct value to post-Fordist capital, such as schools of communication, engineering and business administration, and special institutes for computer, biotechnology and space research. University administrators moved between interlocking corporate and academic boards. Enabled by

changes in intellectual property laws to exercise ownership rights over patents resulting from government funded grants, universities become active players in the merchandising of research results. Amidst this intensifying commercial ethos, the internal operations of academia become steadily more corporatised, with management practices modelled on the private sector.

This rapprochement with academia performs two purposes for capital. First, it enables business to socialise some costs and risks of research, while privatising the benefits of innovations. Second, it subsidises capital's retraining of its post-Fordist labour-force, which is sorted and socialised for the new information economy by increasingly vocational and technically-oriented curricula that stresses skills and proficiencies at the expense of critical analysis and free inquiry. Capital becomes more intellectual; universities become more industrial. Bill Gate's Microsoft headquarters is dubbed a 'campus'; the president of Harvard University suggests American research universities provide a model corporate emulation, with their 'extensive research investment, fluid and decentralised mode of organisation: the gathering of individuals contracted to supply "intellectual capital" under a single "powerful brand"' (*Economist* 2003a: 62). This is the dialectic of corporate-university interaction in the era of cognitive capital. Yet however hard Academia Inc. tries to erase the conflicts from which it evolved, they break out anew. We will review four of these eruptions: the organisation of academic labour, the contradictions of student biopower, the involvement of universities in counter-globalisation movements, and the unanticipated consequences of networking academia.

Immaterial Labour: 'Will Teach For Food'

'Immaterial labour' is the term Negri, Hardt and Lazzarato apply to the form of work characteristic of the era of general intellect (Lazzarato & Negri 1994: 86-89; Virno & Hardt 1996: 260-263; Lazzarato 1996: 133-150). Virno and Hardt define it as the labour 'that produces the informational, cultural, or affective element of the commodity' (1996: 261). It is the 'distinctive quality and mark' of work in 'the epoch in which information and communication play

an essential role in each stage of the process of production' (Lazzarato & Negri 1994: 86). Software programming, biomedical scanning, the 'imagineering' of media studios, graphics design, financial consulting and public relations are all instances of immaterial labour.

Universities in the era of cognitive capital are sites of immaterial labour in a double sense. Along with other educational institutions, they are the locales where future 'immaterial labourers' are trained and taught. And this training and teaching is itself an immaterial labour, in which the information and communication is used to shape the emergent commodity - the student - that will result from the academic process. Sraffa's famous definition of capitalism as the 'production of commodities by means of commodities' in the university setting translates into the production of immaterial labourers (students) by means of other immaterial labourers (instructors) (1960).

Capital's classic labour problem occurs when the human subject objects to the conditions of its commodification. Traditionally, universities have been exempted from this problem by the privileged position of a professoriate protected via neo-feudalistic organisational structures. But the deepening integration into cognitive capital has stripped much of this away. Following the 'lean' logic of post-Fordist capital, academic administrators demand their immaterial labourers do more with less. The one-time ivory tower witnesses intensification in the rate of exploitation. Instructors experience increases in the pace and volume of work. Faculty prerogatives of leisurely hours, time for reflection and writing, wide latitude in self-organisation of time are eroded, especially at the junior level, by increases in class sizes, performance reviews, mandatory grant getting, more required publishing, and a quiet, invisible perishing by stress.

The response seems, in hindsight, obvious: the self-organisation of its immaterial workers. Yet although the first North America faculty unions date back to the 1960s, even a decade ago administrators and professors at many major universities scoffed at the possibility of faculty picket lines and strike votes.

But the pace of faculty unionisation has accelerated alongside that of university corporatisation. In the United States a third of public university faculty are now unionised, a proportion that is, as Bousquet points out, far higher than the national average (2004). The administrative shaping of universities to corporate specifications now has to be negotiated at the collective bargaining table. Strikes are not uncommon.

By far the most militant section of university's immaterial labour force is, however, its contingent workforce. A classic strategy of casualisation decreases permanent hiring in favour of reliance on pools of teaching assistants, sessional instructors and contract faculty subjected to chronic insecurity and lack of benefits, and required to exercise mind-bending flexibility in pedagogic preparation - celebrated in Doonesbury's immortal 'will teach for food' cartoon (also, Nelson 1998). Experience of this dark-side of pedagogic labour makes this group a seething mass of discontent, and in some ways the most organisationally dynamic of all. Graduate students in particular are now an important constituency for labour organising. Teaching assistants' strikes have spread across North American campuses, involving institutions as famous as Yale and scores of others (Aronowitz 1998: 216, 213; Johnson *et al.* 2003).

Faculty bargaining may be no more, or less, radical than the unionisation of various other sectors of the public service. Indeed, as Bousquet and Terranova point out, its logic is ambiguous. Faced with a restive mass of immaterial labour, university administrators' best strategy - backed by centuries of academic hierarchy - is to ensure that regular and contingent faculty remains divided. Tenured faculty 'schizophrenically experience themselves as both labor and management', and in many cases have been have been 'complicit in the perma-tempering of the university', using their newly acquired negotiating power to cut deals that preserve salaries and privileges at the expense of flexibilised lecturers and TAs (Bousquet & Terranova 2004). This process tends towards what Bousquet terms, 'tenured bosses and disposable teachers'. Only if campus labour emphasises the commonality between contingent and tenured workers,

do universities face a radical and powerful union challenge.

There are, however, two aspects of faculty unionisation that deserve particular note. The first is that it represents one of the first large scale experiments in the unionisation of immaterial labour force. Cognitive capital's technological dematerialisation of its production processes was aimed at automating or bypassing the factory power of the Fordist mass worker. The 'sunrise' locales where the instruments and techniques of this process were devised, such as the production facilities of the computer industry, lay outside the scope of traditional labour organisation. The reappearance of collective labour organisation in the university - a site now made central to the development of high technology, and its associated techno-culture - thus represents a return of the repressed. This return means that many issues critical to wide swathes of immaterial workers, such as control of intellectual property rights, payment for 'measureless' work schedules, responsibilities for the self-organisation of flexible schedules, freedom of expression and the protection of whistleblowers, are likely to be brought to table in university bargaining, which may figure as a test crucible for new forms of post-Fordist contract and conflict.

Second, the organisation of university labour creates a new relation between dissenting academics and oppositional social movements. Negri and Lazzarato suggest that when universities were more marginal to capitalism, academics engaged themselves with political movements from a position of apparent exteriority. Today, when university teachers find themselves unequivocally involved in capital's appropriation of 'general intellect', possibilities emerge for academics to make more 'transverse' connections (1994). Rather than descending from the heights to commit themselves to a cause largely external to their daily experience, academics become the carriers of particular skills, knowledges and accesses useful to movements - for example, those against the privatisation of public facilities, or in 'living wage' campaigns supporting service workers on campus and in local communities - in which they participate on the basis of increasing commonalities with other members of post-Fordist 'mass intellect'.

Student Biopower

The other vital factor in the changing composition of academia is its expanding student population. The paradox here is that even as cognitive capital makes higher education more costly, it draws more people in, on a model that Bousquet and Terranova call 'Wide access, but fee-for-service' (2004). The new entrants are mainly young people for whom a degree has been pre-defined as a job qualification, and course selection as shopping for career skills, although there is also a mature contingent undergoing the perpetual occupational upgrades termed life-long learning. Neoliberal apologists point smugly to increasing participation rates in post-secondary institutions, while ignoring the levels of stress and sacrifice this involves; when failure to enter the ranks of immaterial labour is a sentence of social exclusion, studentship becomes an experience no one can afford to miss.

These new cadres of immaterial labour in training are more diverse in gender and ethnicity than previous generations. This is the outcome of protracted struggles for inclusion and recognition, both as students and teachers, by women, peoples of colour, aboriginal peoples, new immigrants, homosexuals and many other subordinate groups. These minority struggles (in the Deleuzian sense of departing from a traditional white male heterosexual norm) were, from the 1970s to the 1990s the most active front of campus politics, eliciting a furious reactionary backlash against the supposed menace of 'political correctness'. But both the real success and the impassable limit of campus identity politics is marked by its recuperation to cognitive capital's drive for a wider recruitment of social intelligence.

An official academic credo of multiculturalism and gender-equity opens the way to more comprehensive and efficient commodification of intellectual labour-power. One positive outcome of the shattering of the ivory tower is thus a cracking of the academic hegemony of the white male. This is not to say this hegemony has been annihilated; in some cases crucial to the formation of immaterial labour, such as computing science and engineering faculties, where female participation rates in

North America have actually declined in recent years, it has barely been dented. But despite the persistence of racism and sexism within academia, at least their gross manifestations are now likely to be viewed at senior administrative levels as undesirable obstacles to the total mobilisation of general intellect.

This mobilisation is comprehensive, not only in terms of the numbers and heterogeneity of the student populations, but in the completeness of their envelopment in commodification processes. University students are not only, as immaterial labour in training, the subjects of the reproduction of labour power. Very many are already subjects of production, meeting high tuition fees by working their way through school, often in low-paid McJobs, as ‘netslaves’ in the precarious sectors of information economy, or, at the graduate level, as research and teaching assistants. At the same time, they are also subjects of a consumption-regime of unprecedented intensity. Students are amongst the demographic niches considered most desirable, and most aggressively targeted by youth culture marketers; they inhabit campuses where corporate logos, saturation advertising and promotional events sprout from every cafeteria, plaza and dedicated lecture theatre. Such a multi-dimensional, omnipresent engagement with commercial processes makes students quintessential examples of what Hardt and Negri term ‘biopower’ (2000) - that is, a subject of capitalism that taps the psychophysical energies at every point on its circuit: not just as variable capital (labour), but also, as a circulatory relay (consumerist, ‘mind share’), a precondition of production (the general pool of biovalues and communicative competencies necessary for ‘general intellect’), and even as constant capital (for example, as experimental subject).

Divided from earlier cycles of student radicalism by the cultural amnesia arising from neoliberal restructuring, this is a generation for whom the anti-Vietnam war movement or Berkeley free speech movements are items of parental nostalgia or retro-movie sets. Yet it has its own sources of discontent, bred from the very scope of their engulfment by cognitive capital. Skyrocketing debt loads means that for many education seems the inauguration of indentured servitude.

Working one's way through school in the contingent sector gives a good look at the underside of the new economy, and a rapid education in the registers of post-Fordist exploitation. Saturation by viral advertising and the marketing ploys of cool hunters can result, not in a passive induction to consumerism but as hyper-vigilant cynicism towards corporate culture and commercial media (Klein 2000). Moreover, mobilisation as student biopower is contradictory. Interpellated almost simultaneously, as subjects of disciplined preparation for privileged managerial responsibility, as subservient and badly-paid service workers and as compulsive hedonistic consumers, contemporary students are in the cross hairs of the 'cultural contradictions of capital' - a situation of fragmenting multiplicity, generating responses that cycle through frantic self-promotion to numbed indifference to political dissent (Bell 1976).

The Multitudinous Campus

From the early 1990s, new currents of activism percolated across North American and European campuses (Vellela 1988; Loeb 1994; Overtz 1993: 70-95). Many were protests against fees, debt-loads and declining learning conditions. They also, however, involved actions against the corporate branding of campus facilities, resistance to the commercial development of university lands; campaigns against university linkages to authoritarian foreign regimes. Very rapidly this radicalism connected with the wider currents of social dissent.

Here it is significant that *Futur Antérieur's* analysis of general intellect arose in the context of the great French general strikes of 1996, opposing the Juppe government's neoliberal regime of privatisation and cutbacks. These strikes involved many technically skilled immaterial labourers - nurses and medical paraprofessionals, air-traffic controllers, workers in the most automated car factories - and also university students and instructors, protesting rising tuition fees and declining conditions of teaching and learning. These strikes have been described as 'the first revolt against globalisation' (Raglu 1996: 1-22), and though this is not entirely accurate, their eruption, bracketed between the Zapatista uprising of 1994 and the Seattle demonstrations of 1999, certainly

marked the rising arc of social unrest variously known as anti-globalisation, counter-globalisation, the new internationalism, the global justice movement, or what Negri and Hardt describe as the revolt of a heterogeneous anti-capitalist 'multitude against Empire' (2000: 93; 2004; Virno 2004).

The dynamics of this broad and complex movement have been widely debated, so I comment here only on some points directly related to universities in the global North. It is possible to identify specific campus-based components within the counter-globalisation movement. In North America, one could point to the emergence of Students Against Sweatshops; to faculty and student movements against the corporate patenting of anti-HIV retroviral drugs made on the basis of university research; and to the groups building solidarity with students studying under conditions of extreme repression in Indonesia or Palestine. However, such a catalogue would be deceptive, because student involvement has been critical to moments and movements that are not specifically campus based. Rather, student activism manifests as a suffusion of youth activism and intellectual energy into wider circuits.

Thus, for example, in the cycle of street demonstrations that ran from Seattle to Genoa, a huge number of participants were students from universities, colleges and schools. To cite an instance from my own experience, at the demonstration against the Free Trade Area of the Americas in Quebec City in 2001, while trade unions and NGOs, afraid of being seen as 'violent' marched away from the fence surrounding the summit site to listen to speeches in a parking lot, it was students who confronted police at the barrier separating policy makers from populace, conducted civil disobedience and risked arrest in tear gas filled streets. More generally, student counter-globalisation politics has not treated universities as self-enclosed arenas of activism, but rather as nodes or platforms within wider networks. Campuses have their chapters of Oxfam, their Third World debt cancellation committees, and their anarchist affinity groups; but these are constituted in connection to a multitudinous array of other groups, situated in unions, churches, schools, NGOs, housing cooperatives or homeless shelters.

Although we have already inventoried some students' grievances against neoliberalism, there is one additional factor that should be mentioned here to explain their widespread participation in the counter-globalisation movement, one that diametrically contradicts cognitive capitalism's vision of *homo hyper-economicus*. This is the idealism of the young, activated in the context of global communication and transport networks. Contemporary universities are, almost unavoidably, cosmopolitan in their culture. Students are aware, at some level, of global inequalities. If they chance on the right courses, they learn about these relative and absolute deprivations. They may witness them first hand, either through tourism, work and study abroad, or diasporic family connections. Despite the massive filtering of commercial media, some glimpse of the scope of planetary immiseration is unavoidable in the circulation of broadcast and digital images that inundates everyday life in general, and campuses in particular. To the degree that students are not fully conditioned to the affective hardening required by the world market, or to psychologically managing the contradiction between liberalism's overt principles and its real economic basis, they are disquieted by the disparity between their conditions and that of the majority of the world's population. They are also, often as it were in the same breath, frightened by what these inequalities mean in terms of the fragility of the world order, of which they are beneficiaries. Uneasy awareness of privilege, even, or perhaps especially, by white upper middle-class students, and desire for a just and safer world order can be a radicalising effect of cognitive capital's globalised optic.

Digital Diploma Mills and Pirate Colonies

Vincent observes that general intellect is in fact 'a labour of networks and communicative discourse'; it is 'not possible to have a "general intellect" without a great variety of polymorphous communications' (1993: 127). One of the defining features of cognitive capitalism is its elaboration of high technology communications systems, of which the most famous is the Internet. Universities have been indissolubly associated with the Net at every moment of its paradoxical history. Its original Pentagon funded development was a classic instance of the military-academic cooperation; its ad hoc growth as a civilian

system based on public funding and open protocols was the work of hacker students and computer science professors; and the launching of a 'dot.com' boom proceeded via the corporate privatisation of academic digital discoveries and spin-off effects, such as those resulting from Stanford University's presence in Silicon Valley.

Academia has in turn been transformed by its own invention. Campuses are today sites of mass digital apprenticeship, where to study means to use a computer, preferably to own one (possession is mandatory at some universities) and to be totally familiar with search engines, web sites, on-line databases, chat rooms, and email. In the 1990s, universities themselves became a direct target of dot.com enterprise with the drive towards the 'Virtual U' - code for the activities of corporate-academic partnerships entrepreneurially pushing the commercial development of large-scale, computer-mediated tele-learning systems.

These experiments were promoted under the banner of accessibility, innovation and inevitable technological progress. But critics such as David Noble not only challenged the paucity of the pedagogical theory behind this project, but argued that such ventures aim at nothing less than the commodification of the university's teaching function, converting academia into what he scathingly terms 'digital diploma mills' (2002). They aim, he says, at 'transforming courses into courseware, [and] the activity of instruction itself into commercially viable proprietary products that can be owned and bought and sold in the market' (2002: 12). At the core of this process is a classic industrial strategy of deskilling and automation, downloading instructors' knowledge into reusable software packages over whose use faculty surrender control. In recent years, administrative enthusiasm for Virtual U experiments seems to have waned in North America, partly as a result of the bursting of the Internet bubble, but also because of the active resistance of both students and faculty at a number of universities. Nonetheless, the 'digital diploma mills' issue remains alive, with university instructors constantly facing the prospect of technological speed up in work-loads through envelopment in on-line teaching requirements, complete

with endless email solicitations, web site preparations, and monitored electronic activities.

There is, however, another side to the networking of the universities. Ironically, cognitive capitalism has failed to contain and control the digital communication system that is the greatest achievement of general intellect. In cyberspace, the vectors of e-capital tangle and entwine with a molecular proliferation of activists, researchers, gamers, artists, hobbyists, and hackers. Networking of universities means that millions of students have access to these subversive dynamics. The multitudinous politics of the counter-globalisation movement, for example, are widely recognised to have been impossible without the Net and the rhizomatic connections it enables (Meikle 2002; McCaughley & Ayers 2003). From the emailed communiqués of Zapatista spokesperson Subcommandante Marcos through the networked opposition to the Multilateral Agreement on Investment, to the parody of official WTO web sites in the 'Battle of Seattle', to experiments in electronic civil disobedience, net strikes, and other forms of 'hacktivism', the Internet has been made into a vehicle of contemporary anti-capitalist self-organisation. There are now circulating through cyberspace innumerable threads of discussion and critique about neoliberal policies and alternatives to them, creating what Harry Cleaver has termed an 'electronic fabric of struggles' (1994: 145). Much of the weaving of this fabric has been the work of students and academics and all of it can be found, whether by intentional search or serendipitous discovery, by other students and academics researching economics, sociology, political science, environmental science or a thousand and one other topics.

Another consequence is that even as universities may be becoming digital diploma mills, they are certainly now pirate colonies. Ease of digital reproduction and the speed circulation are blasting gaping holes in the fabric of intellectual property. As Richard Barbrook notes, while the official ideology of post-Cold War North America is triumphal celebration of the free market, in their daily practice millions of Americans are actually involved in an on-line digital circulation of

free and unpaid music, films, games and information in a culture of open source and free software initiatives and digital gift economy practices that in effect amounts to a form of ‘dotcommunism’ (1999).

These practices are part of the daily life of university students. Peer-to-peer networks such as Napster and Gnutella, and their more recent successors, such as Kazaa and Bit Torrent, which are terrorising the music, film and games conglomerates, are very largely academia-based phenomena, created and used by students. The music business now seriously contemplates ‘that parents could be presented with a bill for their child’s downloading activities at college, and degrees could be withheld until someone pays’, and the Massachusetts Institute of Technology has had to resist subpoenas from the industry ‘seeking the names of students it suspects of being heavy file-sharers’ (*Economist* 2003b: 43). The defendants in many of the landmark cases contesting the intensifying corporate enclosure of digital networks are student hackers, samplers and pirates.

‘P2P’ is the product of a student generation for whom the potentialities to freely reproduce and circulate digital information have become the basis of what Hardt and Negri call ‘a kind of spontaneous and elementary communism’ (2000: 257). The ‘electronic fabric of struggle’ is the organisational tissue of an anti-corporate and anti-capitalist politics. Many will object to mentioning music piracy in the same breath as political activism. But both are on a collision course with the property regime of capital in its most advanced forms. Although the worlds of Indymedia centres and free downloads do not necessarily intersect, there is a connection between them in terms of rejection of commodification and privatisation. In their explorations of both tactical media and peer-to-peer networks, students are in the midst of a very practical, hands-on contestation of cognitive capital’s control over the means of communication.

Armoured Globalisation and ‘Species Being’ Movements

Forty years ago, campuses could become temporary red ghettos, but there was a fundamental divorce between these enclaves and the more general conditions

of work and exploitation. Today, the much tighter fusion of academia with larger social circuits - a product both of the corporate breaking of the ivory tower and of its associated digital diffusion - removes such relative freedom, but opens other possibilities. The conventional distinction between university and the 'real' world, at once self-deprecating and self-protective, becomes less and less relevant. If students and teachers lose some of the latitude of action relative privilege once afforded, they also become potentially participant in, and connected to, movements outside the university. These movements in turn, are drawn into the orbits of socio-technological innovations, such as the Internet, where universities continue to provide a matrix of radical experimentation. The corporate world's subsumption of the campus generates a mirror-world of counter-capitalist activity.

The current scope and the capacity of this activity should not be exaggerated. The forces presently challenging cognitive capital in today's university campus are real, but sporadic and unsynchronised - a scattering of micro-resistances, occasionally constellating in a loose mesh of affinities. This mesh could unravel. In the aftermath of 9-11, the 'war on terror' has drawn a dark, scorched line across the horizon towards which so many radical rivulets and transformative tributaries were flowing. It brings to crescendo what many heard approaching: confrontation between the techno-cultural whirlwind of cognitive capitalism and an array of religious-ethno-nationalist fundamentalisms arising as a defensive response to the immiseration and disruptions of the world market: 'Jihad versus McWorld' (Barber 1995). In this neo-extermist spiral, the amazing techno-scientific expressions of general intellect will not appear as retrovirals and open source software, but instead as swarms of robotised battle-drones chattering to each other in the skies over smoky landscapes as they search for mobile, weaponised smallpox laboratories.

In this context, there is a risk that all types of dissent will be de-legitimised and attacked. The chilling effect has already been felt on campuses in the United States, for example in the proposals to replace programmes of post-colonial

studies, seen as over-critical of imperial hegemony, with programmes that train experts in Islam and Arabic languages in a way that is functional to 'homeland security' requirements. As we enter a phase of 'armoured globalisation', in which continued expansion of the world market is accompanied by hyper-militarisation, we can expect further closures of intellectual space. So too, however, can resistance expand to these closures. Students and their teachers were widely involved in the massive movements of opposition to the Iraq war, defiantly in the United States and in the United Kingdom, successfully in Canada and in many parts of Europe. Currently, in the aftermath of a second electoral victory by the Bush regime, counter-globalisation and anti-war movements are in a phase of recomposition. The outcomes are uncertain. But, to be unabashedly speculative, and in a spirit of grounded utopianism, I would suggest that this moment opens towards the emergence of 'species being' movements.

'Species being' is the term the young Marx used to refer to humanity's self-recognition as a natural species with the capacity to transform itself through conscious social activity (1964).³ Today, in the era of the Human Genome Project and the World Wide Web, species-being manifests in a techno-scientific apparatus capable of operationalising a whole series of post-human or sub-human conditions. By entrusting the control and direction of this apparatus to the steering mechanism of marketisation, cognitive capital is navigating its ways onto some very visible reefs: a global health crisis, biospheric disaster, yawning social inequalities dividing a world well seeded with terrifying arms.

Species-being movements are biopolitical activisms that contest this trajectory, opposed to both the world market and reactive fundamentalisms, characterised by cosmopolitan affinities, transnational equalitarianism, implicit or explicit feminism, and a strong ecospheric awareness. Generated within and against a capitalism that is 'global' both in its planetary expansion and its ubiquitous social penetration, species-being movements will aim to fulfill the universalisms the world market promises but cannot complete. They will invoke some of the same intellectual and co-operative capacities cognitive capital tries to harness,

but point them in different directions, and with a vastly expanded horizon of collective responsibility. They will establish networks of alternative research, new connections and alliances; they build a capacity for counter-planning from below.

Universities will be key in this contestation. The possibility of such an academic counterflow exists because, to effectively harness mass intellect to accumulation, capital must maintain a certain degree of openness within the universities. Part of what it seeks in its invasion of academia is the creativity and experimentation of immaterial labour-power, qualities vital to a high-technology economy based on perpetual innovation. But if industry is to benefit from such invention-power, it cannot entirely regiment the institutions of education. However carefully it circumscribes the budgets and mission-statements of academia, capital's incessant search for competitive advantage requires chances for unforeseen synthesis, opportunities for the unpredicted but really profitable idea or invention to emerge. And this gives a limited but real porosity to universities.

Dissident students and academics linked to species being movements can exploit this porosity, to research and teach on topics of value to movements in opposition to capital; to invite activists and analysts from these movements onto campuses and into lectures and seminars; and to use the university's resources, including its easy access to the great communication networks of our age, to circulate news and analysis that are otherwise marginalised. Earlier, I cited Vincent's suggestion that capitalism's managers are, 'in the name of profitability and immediate results' interdicting 'connections and relationships that could profoundly modify the structure of the field of knowledge' (1993: 123). Some of these connections and relationships include: the establishment of new planetary indices of well-being beyond monetised measurement; investigation of new capacities for democratic social planning provided by information technologies; the development of systems of income allocation and social validation outside of obligatory waged labour; the emergence of new models of peer to peer and open-source communication systems; the critique of dominant paradigms of political

economy in the light of ecological and feminist knowledges; the refinement of doctrines of global ‘public goods’ and of concepts of global citizenship; and the formation of aesthetics and imaginaries adequate to the scope of species-being. At the onset of the twenty-first century, cognitive capital is, in its self-appointed role as planetary pedagogue, posing every major question that confronts humanity in terms of marketisation, monetisation, competition and profit. But the more insistently it demands that general intellect respond to this catechism, the greater the likelihood it will start to get answers other than those it expects.

5

NOTES:

1. Writings of this group can be found in Virno and Hardt's *Radical Thought in Italy* (1996). A key essay is Virno's 'Notes on the General Intellect' (in Makdisi et al. 1996); for later discussions of 'general intellect', see Hardt and Negri's *Empire* (2000) and *Negri's Time for Revolution* (2003). See also Terranova's 'Free Labor: Producing Culture for the Digital Economy' (2000: 33).

2. On 'cognitive capitalism', see the on-line papers from 'Class Composition in Cognitive Capitalism', University of Paris, 15-16 Feb 2002, available at <<http://www.geocities.com/CognitiveCapitalism/>>.

3. For discussion of species-being movements, see Dyer-Witheford's 'Species-Being Resurgent' (2004: 476-491; and forthcoming '1844/2004/2044: The Return of Species-Being', in *Historical Materialism*).

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