

Chapter 9

Intellects

General Intellect

At the beginning of this work I described class conflicts within high technology capitalism as a "contest for general intellect." This final chapter returns to that phrase. After describing Marx's original use of the term "general intellect," I examine the recent reworking of his concept by a group of theorists clustered around the French journal Futur Antérieur, and suggest how their perspective helps frame some of the issues discussed in the preceding pages. I then conclude with some reflections on the implications of this analysis of "general intellect" for those who teach and study in universities.

Marx introduces the concept of "general intellect" in a passage of the Grundrisse known as the "Fragment on Machines."¹ In these pages he departs from his customary emphasis on the role of work in creating in the surpluses needed for social progress. Rather, he suggests that at a certain point in the development of capital the creation of real wealth will come to depend not on the direct expenditure of labour time in production, but on two interrelated factors: technological expertise--"scientific labour"--and organisation--"social combination."² The crucial factor in production will become 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."³

The main expression of the power of "general intellect" is the increasing importance of machinery --"fixed capital"--in social organisation:

Nature builds no machines, no locomotives, railways, electric telegraphs, self-acting mules etc. These are products of human industry: natural material transformed into organs of the human will over nature, or of human participation in nature. They are organs of the human brain, created by the human hand: the power of knowledge, objectified. The development of fixed capital indicates to what degree general social knowledge has become a direct force of production, and to what degree, hence, the conditions of the process of social life itself have come under the control of the general intellect and been transformed in accordance with it.⁴

There are two forms of technology Marx particularly notes as signaling capitalism's mobilisation of "general intellect." One is the development of production systems based on "an automatic system of machinery . . . consisting of numerous mechanical and intellectual organs, so that the workers themselves are cast merely as its conscious linkages."⁵ The other, to which his allusions are more scattered but equally persistent, are the networks of transport and communication integrating "the world market." The development of these human-eliminating, globe-spanning machines indicates the degree to which "general intellect" has been successfully mobilised and mastered by business, and "the accumulation of knowledge and skill, of the general productive forces of the social brain . . . absorbed into capital."⁶

However--and this is the whole point of Marx's analysis--such a level of technological advance, which seems at first a capitalist utopia, contains within itself the seeds of a capitalist nightmare. By setting in motion the powers of scientific knowledge

and social co-operation, capital ultimately undermines itself. This occurs for two reasons. First, as advances in machinery and organisation reduce the requirement for direct labour in production, the need for people to sell their labour power--the very basis of capitalism's social order--is systematically eroded. There arises a "monstrous disproportion" between individual labour time and the forces set in motion by organised science.

This is reinforced by a second tendency, the increasingly social nature of activity required for technoscientific development, which unfolds not on the basis of individual effort but as a vast co-operative endeavor. As this becomes more and more apparent, highlighted by the diffusion and integration of communication and transport networks, both private ownership and payment for isolated quanta of work-time appear increasingly as irrelevant impediments to the full use of social resources. Automation and socialisation together create the possibility of--and necessity for--dispensing with wage labour and private ownership. In the era of general intellect "Capital thus works towards its own dissolution as the form dominating production."⁷

Today, "The Fragment on Machines" seems simultaneously astoundingly prescient and sadly anachronistic. In its extrapolation of capital's technoscientific trajectory it is surely prophetic. What Marx describes is eminently recognisable as a portrait of what is now commonly termed an 'information society' or 'knowledge economy,' in which the entire intellectual resources of society, from shopfloor production teams, to university-industry partnerships, to the regional 'innovation milieux' of microelectronic and biotechnology companies, is mobilised to produce the technological wonders of robotic factories, gene splicing and global computer networks. Yet any suggestion that this development of the productive forces leads automatically to the advent of socialism

appears definitively refuted. Instead, we seem to be witnessing a triumphant reorganisation of capitalism that is deploying the new technological innovations to solidify an unprecedented level of global domination. What --if anything--can now be made of the revolutionary optimism of Marx's account of "general intellect"?

Futur Antérieur

It is this question that is addressed by the recent work of a group of theorists associated with the French journal, Futur Antérieur. This group includes veterans of the Italian autonomia movement whose earlier course was charted in Chapter 4, such as Toni Negri and Paolo Virno, younger scholars making new departures within this tradition, such as Michael Hardt and Maurizio Lazzarato, and others with roots in different lines of Marxism, such as Jean-Marie Vincent.⁸ The central points of their analysis can be summarised as follows.

The "mass worker" struggles of the 1960s and 1970s and the consequent crisis of Fordism compelled capital towards extraordinary levels of high-technology automation and global mobility. These post-Fordist experiments have now brought capital to a point corresponding to Marx's account of "general intellect." However, rather than generating the ordained demise of capitalism, these developments are resulting in something much more ambiguous. Paradoxically, the revolutionary tendencies Marx identified--the erosion of wage labour, the increasingly 'social' nature of production--are occurring, but in forms prescribed by an order that continues to organise itself on the basis of the wage and private ownership. As Virno remarks, these processes remind one of what Marx wrote about joint-stock companies; that in such institutions "one witnesses the disappearance of private

property on the very ground of private property."⁹ Today post-Fordist capital displays a similar transformation of communist potentialities into capitalist actualities. As Virno puts it,

. . . the displacement is real, but the ground on which it is accomplished is no less real. To think these two aspects jointly, without reducing the first to a mere virtuality and the second to an external "rind": such is the difficulty that cannot be avoided.¹⁰

In this situation it is not enough to focus, as Marx did, on the objectification of social knowledge in new technologies. Rather, the critical issue is that of the nature of the human activity required to create, support and enable this technoscientific apparatus. Here, Futur Antérieur suggests we encounter another paradox. While capital has developed machines to subordinate and reduce labour at the point of production, this development itself demands the emergence a new range of social competencies and co-operations--the cultivation of "general social knowledge." This subjective component of general intellect Futur Antérieur group explore under the label of "mass intellectuality" ("intellectualité de masse").

"Mass intellectuality" is the ensemble of 'know-hows' which supports the operation of the high-tech economy. It is "the social body" as a "repository of knowledges indivisible from living subjects and from their linguistic co-operation."¹¹ It comprises a "whole gamut of qualifications, modes of communication, local knowledges, informal "language games"

and even certain ethical preoccupations"¹² Negri says that "mass intellectuality" is 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.¹³

Mass intellect appears not just in production but throughout a whole network of educational and cultural relations. It is present in industrial and service workers, labouring at the data-face: in students keeping pace with technological innovation through 'life-long learning'; and in the various technocultural literacies on which new markets for electronic and entertainment goods depend. Mass intellectuality is intimately bound up with the new prominence of what Negri and Lazzarato term "immaterial labour"-- 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."¹⁴ Overflowing and surpassing previous Marxist distinctions between base and superstructure, economics and culture, mass intellectuality is "difficult to describe in economic terms" but is "for that very reason (and not despite it) the fundamental ingredient of today's capitalist production."¹⁵

The crucial question thus becomes how far capital can contain what Vincente terms "this plural, multiform constantly mutating intelligence" of mass intellect within its

structures.¹⁶ As he observes, it "appears to domesticate general intellect without too much difficulty."¹⁷ But this absorption in fact 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.¹⁸

The Futur Antérieur group suggests that these structures of exclusion and limitation can become the occasion for new forms of social conflict.

Team Concept

Perhaps the most detailed analysis of the new antagonisms that Futur Antérieur sees as characterising the era of "general intellect" is Negri and Lazzarato's discussion of "participative management."¹⁹ As they point out, in many post-Fordist industries the

quantitative elimination of labour by computerised automation has paradoxically been accompanied with increasing managerial concern about the quality of the remaining workers. To prevent or fix the many breakdowns of new production systems, to run them at peak capacity, requires operators who are creative, co-operative and alert. This requirement has resulted in innumerable post-Taylorist experiments in work organisation "- 'quality circles,' 'team concept,' 'Japanese management techniques,' 'Total Quality Management'--in which the intellectual and intersubjective aspects of labour previously suppressed by Taylorism are mobilised for problem solving and participation. Such systems demand that workers,

. . . become 'active subjects' in the co-ordination of the different functions of production, instead of being subjected to it as simple command. As the new management prescribes, today it is "the soul of the worker" which must come down into the factory.²⁰

If new production systems are the objective side of capitalised "general intellect," the work team represents its subjective side, in cellular form.

Such participative management schemes are, Negri and Lazzarato say, "techniques of power."²¹ In an apparent contrast to Taylorism, capital grants its labour power a certain fusion of conception and execution. Despotic management seems to retreat from the shop floor. Capital continues, however, to dominate the overall process from the heights of the enterprise, retaining control of finance, investment, marketing, and, of course, profit.

Problem-solving is predicated on accepting these pre-determined parameters.²² Although

management exhorts dialogue and interaction, communication is actually reduced to "a simple relay of codification and decodification, within the context . . . that has been completely normalised by the firm.²³ In this context, the exhortation to participate is, as Lazzarato observes, authoritarian: "one must express oneself, one must speak, one must communicate, one must co-operate."²⁴ Indeed, the new team organisation is even more totalitarian than the old assembly line, precisely because it seeks to involve the very subjectivity and will of workers, making them "self control" themselves so that command "arises from the subject itself, and from the communicative process."²⁵

However, Negri and Lazzarato suggests there is another side to this process. In delegating—even nominally—certain managerial responsibilities to workers, capital is partially relinquishing its claim to act as the mediator and co-ordinator of production. There is a potential tension between capital's control of enterprises and the increasingly self-directed nature of work. Drawing on Negri and Lazzarato's work in the context of the South African auto-industry, Franco Barchesi observes,

. . . a massive contradiction arises for capital: it has to stimulate and harness subjectivity by encouraging increasing worker responsibilisation, even creativity, in order to grasp a social and communicational surplus value in the workplace. This . . . comes to constitute a competitive edge in the global fight for shrinking and specialised markets. But in doing so, capital has to be careful in depriving worker subjectivity of any implication in terms of power and control . . . In this way, capital silences subjectivity

just at the same time it calls it into life. Capital has not found, yet, the ways to deal with this contradiction.²⁶

Such tension becomes increasingly pronounced as business uses the knowledge squeezed from team production to intensify automation, speed up work and increase lay-offs. In this sense, Negri and Lazzarato suggest, post-Fordist production methods, although devised as a means of circumventing and coopting workers organisations, contain the seeds of an aggravated conflict.

Lazzarato has examined some of these dynamics in strikes at Peugeot car factories in France in 1989.²⁷ These strikes were significant because they broke a relatively long period of industrial peace in the French automobile industry. They involved a new generation of employees, supposedly distanced from the militancy of the older "mass" assembly-line workers, including many immigrants, and trained for work in a highly automated environment. Lazzarato argues that the company's rhetoric about 'involvement,' 'participation,' and 'dignity', although at first quite attractive to workers, gradually became more and more mired in contradiction. There emerged an increasing discrepancy between the company's supposed willingness to entertain all and any 'suggestions' and its evident determination to implement only those that enhanced productivity. The alleged ethic of co-operation was riddled with actual grievances about pay and pace of work. This led to mounting tension on the shop floor, which eventually exploded. In the strikes, one of the workers' demands was for the company to live up to its own rhetoric about respect and co-operation. Moreover, in this strike, Lazzarato argues, new forms of shop floor and community organisation could be seen emerging, in some ways supplanting the more

conventional and rigid forms of trades union hierarchy. This, he suggests, shows that the 'co-operative' aspects of the new work organisation were being mobilised, but in the form of counter-power. Moreover, these isolated strikes can now be seen as anticipations of the society wide explosions of the 1995/1996 general strike in France, with its remarkable spontaneous organisation by myriad popular assemblies.

Although North America has not seen concerted unrest on the scale of the French strikes, Futur Antérieur's claim that forms of "participative management" are generating new flash-points for industrial conflict receives some confirmation if we examine workplace tendencies in the US and Canada. A survey of 1500 workers and managers on the topic of team organisation, conducted by the US consultant firm Kepner-Tregoe produced findings so shocking that the researchers had them checked by another company. The verified results clearly showed that every aspect of participative management elicited disenchanted cynicism amongst workers. In the words of Kepner-Tregoe's President:

The vitriolic response was amazing . . . Workers don't like their companies, and there is a fundamental social change going on in this country regarding workplace relations. The workers hear the verbiage about how 'our people are the most important asset we have' and they want to throw up.²⁸

In at least one sector where capital's drive for team work and other new management techniques has been very intense, the automobile industry, the mid-1990s have seen a series of significant strikes. Tactically, car workers discovered the susceptibility of highly integrated, technologically sophisticated 'just-in-time' production to strategic work

stoppages. Strategically, they made demands that responded aggressively to new technological conditions by challenging on traditional managerial prerogatives. In Flint, Michigan, car workers struck to compel hiring new workers rather than increasing overtime, linked these demands to the need to reduce unemployment, and won partial successes.²⁹ In 1996 Canadian autoworkers responded to contracting-out by General Motors by striking in support of 'job ownership'--shorter work time, restrictions and outsourcing, and guaranteed job levels for the communities in which plants were located.³⁰ The strike, which lasted twenty one days, and included the workers' occupation of a plant from which GM was attempting to remove dies to start production elsewhere, won considerable public support and was victorious. In both these cases, workers fought for real, not token, voice in production decisions, and linked workplace demands to a social agenda aimed at counteracting the destructive consequences of capitalism's post-Fordist restructuring.

As we saw in Chapter 5, some North American factory workers, faced with drastic downsizing have gone so far as to introduce alternative production proposals. Autoworkers in Ontario and Los Angeles have entered into alliances with environmental and community groups to introduce 'green work' plans, and have even began to connect up these projects internationally. In other sectors, especially in the manufacturing and defence industries, there have been instances where workers faced with automation and relocation have challenged capital's right to shut down.³¹ Plant closures have been met with plant occupations and picket lines aimed not only at stopping strike-breakers getting in but at preventing machines being taken out. Facing the withdrawal of waged work, labour has deployed its invention power not so much to stop production (as in classic strike

strategies), but to keep it going—and, sometimes, to transform it, converting military or ecologically damaging industries towards “socially useful production.”³² Sometimes symbolic, sometimes sustained, such actions have occasionally either forced capital to continue operations contrary to its intentions or transferred management entirely into the hands of the workers. Repeatedly they have involved the creation of alliances with wider community groups negatively affected by capital flight. Initially defensive and local, usually limited in their aims, most of such efforts are painlessly reabsorbed within the overall logic of market relations. Nevertheless, in their proliferation, they constitute a multiplicity of subversive question marks about the priorities of capitalist production.

Alongside these projects for what might be called “autonomous production” are a whole series of struggles over the allocation of time.³³ The objectives workers seek are diverse: resistance to lay-offs, roll-backs, speed-ups and contracting out; demands for redundancy compensation; support for retraining; better pay and conditions for contingent workers; protection of health and other benefits. These goals are not, *per se*, new. But they are set in a new context—that of the vast potential surpluses of labour time produced by automation. Underlying the new wave of struggles is a rejection of capital’s prerogative to plan and manage these surpluses to its own advantage. Most importantly, there are, as discussed in Chapter 8, a number of initiatives to address the crisis of employment by shortening the working day, and introducing new, general forms of income distribution separate from the wage. These movements often emerge at the intersections of labour, feminist, green and poor people’s movements. Currently tentative and in a state of flux, their potential, in terms of weakening the wage relation, reorganising household labour and

stopping the environmental destruction resulting from capital's drive for "production for productions sake," is very wide.

In such movements social labour has mobilised the same intellectual and co-operative capacities that capital tries to harness through teamwork, but in different directions, and with a vastly expanded horizon of collective responsibility. These movements establish networks of counter-research and pools of shared experience, new connections and alliances; they build a capacity for counter-planning from below. In short, they represent a nascent alternative to capitalism's organisation of "general intellect."

Interactive Networks

The other field where Futur Antérieur has investigated the contradictions of "general intellect" is that of media and communication. As Vincente puts it, "general intellect" is in fact "a labour of networks and communicative discourse";

In effect, it is not possible to have a "general intellect" without a great variety of polymorphous communications, sequences of communication in the teams and collectivities work, communications to use in a creative fashion the knowledges already accumulated, communications to elaborate and record new knowledges.³⁴

Capital has developed technologies of information--mass media, telecommunications, and computer networks--to consolidate markets and ideological control. But here too it has

been unable to develop the objective, fixed, machine side of "general intellect" without also involving the subjective, variable, human aspect. Negri specifically rejects media critiques framed only in terms of "manipulation."³⁵ Although we now inhabit a world where corporate media seem to constitute a vast "machine" which dominates society, there are, he says, spaces on the "inside" of this machine within which new individual and collective subjectivities can emerge.³⁶

The Futur Antérieur authors have studied a number of movements in France where groups opposing neoliberal policies have shown great dexterity in using media and information technologies to publicise their cause. These include strikes by cultural workers--film-crews and audio-visual technicians--fighting for improvements in the conditions of contingent work; the movements of nurses opposing cut-backs and privatisation of health care; and the student revolts of 1986, which were discussed in Chapter 4.³⁷ In Italy, Lazzarato has analyzed the media practices of the "Panther" student movement, which in the late 1990s closed some one hundred and fifty Italian colleges and universities in protests against privatisation.³⁸ These movements, Lazzarato says, were characterised by their extreme sophistication in counter-management of the media. The students exercised careful control of how, and under what conditions, journalists covered their actions. They refused to subscribe to conventions damaging to the political integrity of the movement (e.g. focus on leaders). And they made constant use of information technologies--particularly fax--to generate their own coverage and bulletins. Lazzarato argues that the Panthers' careful orchestration of refusals and reappropriations display the generational characteristics of subjects who, having come-of-age in a media environment, are capable of shaping this

terrain for their own political purposes, rather than merely being passively exploited as objects of spectacular display.

These tendencies are, again, manifest in a North America context, where alternative and subversive media channels--political film and video networks, community TV, microwatt and community radio--have spread like fireweed. Even as corporate media consolidate more massive vertically integrated empires, "mass intellect" seems engaged in a proliferating counter-usage of information technology, springing hundreds of leaks and counter-flows within capital's communication apparatus. Such grassroots media experiments are not only plaguing capital with an epidemic of transgressions against "intellectual property," but are playing a crucial role in circulating news and analysis of struggle across sectorially diverse and geographically distant movements.

Nowhere has this been more apparent than in the field of computer-mediated communications. As we have seen, in the development of this extraordinarily powerful technology capital has in fact depended on a mass of informal, innovative, intellectual activity--'hacking'--on whose creativity commerce constantly draws even as it criminalises it. It was precisely out of capital's inability to contain such activity that there emerged the astounding growth of the Internet. This is surely the quintessential institution of "general intellect." For, despite all the admitted banalities and exclusivities of Internet practice, one at moments glimpses in its global exchanges what seems like the formation of a polycentric, communicatively-connected, collective intelligence.³⁹

Today, of course capital is trying to recuperate this collective intelligence by channeling it along the information highway, forcing its traffic into the commodified pathways of video-on-demand, teleshopping, tele-gambling, and personalised advertising.

It is funneling network interactions into a commercial "interactivity." As Chris Carlson observes, there is an interesting parallel between such media interactivity and participative management techniques.⁴⁰ For the control which corporate interactivity offers media audiences,

. . . mimics the false control offered by workers participation schemes, wherein workers decide how to accomplish the businesses mission, but, crucially, not what the mission is.⁴¹

If the work-team is the microcosmic, cellular, shopfloor form of capitalism's "general intellect," the media interactivity of the corporate information highway is its macrocosmic mode, expanding through the entire social metabolism in an attempt integrate subjects into a seamless circuit of labour and consumption.

On the Internet, however, mass intellect has spectacularly refused to be corralled. In earlier chapters, I have already given several instances of the dissident cyber-communication that has become a significant part of oppositional politics in the 1990s. To these examples I can do no better than add one more instance, originally reported by the conservative Canadian newspaper The Globe and Mail, but, appropriately enough, emailed to me by a telecommunications worker who tirelessly relays anti-capitalist news to an array of electronic contacts. The report, dated May 1998, concerns the stalling of the Multilateral Agreement on Investment (MAI).

The MAI was intended as the latest in the round of international agreements assuring the untrammeled activity of the world market, in this case by effectively removing

governments ability to regulate corporate direct investment. Officials of the OECD pursued preliminary discussions in high secrecy for eighteen months, apparently pursuing a stealth strategy designed to circumvent opposition. In 1997, however, activists from the Malaysian-based Third World Network alerted international social movements to these proceedings. The Council for Canadians, a movement fighting the destruction of the Canadian welfare state, obtained a draft of the treaty and, as The Globe and Mail puts it, "immediately posted it on Web site and made sure allies around the world knew it was there through e-mail."⁴² As news of the planned agreement leaked, it was met by a wave of protest:

High-powered politicians had reams of statistics and analysis on why a set of international investing rules would make the world a better place. They were no match, however, for a global band of grassroots organisers, which, with little more than computers and access to the Internet, helped derail a deal. . . . Using the Internet's capability to broadcast information instantly worldwide (these) groups . . . have been able to keep each other informed of the latest developments and supply information gleaned in one country that may prove embarrassing to a government in another. By pooling their information they have broken through the wall of secrecy that traditionally surrounds international negotiations, forcing governments to deal with their complaints. "We are in constant contact with our allies in other countries," said Maude Barlow, in the Council of Canadian's chairwoman. "If a

negotiator says something to someone over a glass of wine, we'll have it on the Internet within an hour, all over the world.”⁴³

The Globe and Mail goes on to remark that “the OECD’s efforts to harness the Internet have not caught up in colour, content and consumer friendliness to those of the advocacy groups” and reports an official’s rueful comment that it had failed on a “strategy on information, communication and explication.” The extent of the failure was clear when disagreements amongst the negotiators, disagreements at least in partly reflecting the pressures bought to bear on their domestic governments by popular movements, resulted in a failing to meet their initial deadline for negotiating the MAI. “This is the first successful Internet campaign by non-governmental organisations,” said one diplomat. “It’s been very effective.”⁴⁴

It would be foolish to exaggerate the significance of what may prove only a temporary and tactical victory. Nor should The Globe and Mail’s account of “How the Net Killed the MAI” be uncritically accepted, for it overlooks the amount of very traditional, on-the-ground in person meetings, marches, demonstrations and pickets, involved in the anti-MAI mobilisation. However, if its analysis is even partially true--and my own experiences of the campaign suggests that it is--then this is a striking vindication of Negro’s thesis about the capacities of mass intellect to reclaim advanced capital’s means of communication. Moreover, this example suggests that social movements are beginning to consider using this capacity in more than a reactive way. Spokespeople for the Council of Canadians are cited as suggesting that the next stage of the anti-MAI campaign will activate the global communications network to circulate plans for alternatives to capitalism’s

globalising project. They stress that while anti-MAI groups are “against this model of economic globalisation” their use of the Internet shows their own commitment to the “idea of coming together and working together” across international boundaries.⁴⁵ Such global, electronically facilitated counter-planning is precisely what might be expected of a movement of “mass intellect.”

How General is “General Intellect”?

Looking at the contradictions appearing both in the workplace and in the larger societal networks of the post-Fordist economy, the Futur Antérieur group argues that mass intellect is in fact potentially explosive for capital. This volatility arises not only from a dynamic of immiseration--with more and more people being expelled from production by automation--but also from a reappropriative process in which "mass intellect" begins to fold back into itself the organisational and technological knowledges necessary for the running of society. Negri now calls this capacity "constituent power," and describes the task of radical politics as the creation of a "republic" that dissolves both capitalist command and state authority.⁴⁶ Virno speaks of an "exodus" from the "society of work" made possible by a radical re-disposal of the surplus time arising from automation.⁴⁷ It is these potentialities of "mass intellect" which Futur Antérieur now sees pulsing through a wave of social protest in advanced capitalist societies of the 1990s--in France, but also in the large scale strikes and protests in Italy, Germany and Belgium, and to a lesser degree in the North America.

The argument that subversive potentialities exist at the very heart of the technological armature that seems to make contemporary capital so impregnable is an

attractive one. Although only starting to be translated and discussed in North America, *Futur Antérieur*'s revival and reworking of the category of "general intellect" has already sparked some debate in Europe. This has, however, included some substantial criticisms.⁴⁸

Perhaps the most serious of these objections is that, in its capitalist form, "general intellect" is not "general" at all, but rather structured by an intensely hierarchical division of labour. This restricts crucial knowledges to a narrow stratum of privileged, and hence loyal, employers, leaving the rest to suffer the effects of technological deskilling. The edifice of scientific-technological power depends not just on scientists, engineers, programmers and various "symbolic analysts" but on a mass of janitors, homeworkers, fast-food cooks and other service workers. But the crucial point, the critics say, is that these latter are excluded from the intellectual functions of the capitalist economy. The whole capitalist organisation of work is in fact, predicated on dividing the 'head' of the collective worker from the 'arms,' 'feet,' 'digestive,' 'excretory,' and 'reproductive' organs. Given this, the capacities *Futur Antérieur* focuses on would seem to be very unevenly distributed.

Associated with this criticism is a suspicion about some of *Futur Antérieur*'s terminology--particularly its references to "immaterial labour." For this can easily be read as obscuring the continued importance of a vast mass of all-too physical and material work in the post-Fordist economy--domestically, in the service sector, and internationally, in everything from labour on coffee plantations to the trade in body organs. To speak of "immaterial labour" can also easily occlude some very corporeal components of high-tech work, such as the epidemic of repetitive strain injuries associated with computer use.

These problems are clearly related to the relatively cursory analysis of the gendered or international dimensions of "general intellect" offered by Futur Antérieur--omissions that might be pointedly related to the fact that most of its authors are men, located in Europe or North America. The new circuits of capital, it could be argued, look a lot less "immaterial" and "intellectual" to the female and Southern workers who do so much of the grueling physical toil demanded by a capitalist "general intellect" whose headquarters remain preponderantly male and Northern. Indeed, the Futur Antérieur analysis has been accused of an all-too-familiar sort of Marxist vanguardism, whose protagonist is now not the 'industrial' but the 'intellectual' proletariat--a vanguardism which is, however, made peculiarly implausible by the relatively privileged conditions which its chosen protagonist enjoys.

Futur Antérieur authors have replied to these objections. Hardt and Negri go to some pains to designate "mass intellectuality" as a general propensity of the post-Fordist proletariat, and not as some "recomposed vanguard or leading sector."⁴⁹ Technoscientific labour, they say, is a "massified quality of labouring intelligentsia, of cyborgs and hackers."⁵⁰ It is " a quality of subjectivity that extends through the various sectors of production."⁵¹ Discussing the category of "immaterial" work, Hardt and Negri underline that "however immaterial this labor might be it still involves both brains and bodies."⁵² "Mass intellectuality" has to be understood as including the affective, emotional work performed inside and outside the home by women--for example, the labour of nurses which is both "both highly technical and affective."⁵³ Moreover, the Futur Antérieur focus on advanced, post-Fordist production methods is not, they say, meant to deny the existence of other Fordist or even more archaic techniques, particularly in the South. Rather, it only

suggests that high-technology practices furnish the command, control and communication capacity through which the whole system operates, and that these practices, in both obvious and subtle ways, bathe the whole arena of struggle in their influence.

As Ed Emery has recently suggested, resolution of the debate about "general intellect" really calls for a project on the lines of what Marx called "a workers' inquiry," involving a network of researchers engaged in participatory study of emergent forms of struggle.⁵⁴

In the meantime, my own view is that while the Futur Antérieur analysis has to be very seriously qualified, it is also 'onto' something important. Although the initial propositions of Negri, Lazzarato and Hardt need extensive revision to take fuller account of capital's tendency to polarise the allocation of skills and competencies along lines of gender and race, such a reworking need not invalidate the concept of "mass intellect."

As we saw in Chapter 5, while capital has found in computers and other forms of informatics the weapons to assault the old factory-centered fortifications of working class, this attack is rebounding in unpredicted ways. The creation and operation of such technologies depends on widespread scientific and organisational competencies. Indeed, it presumes the very development of so-called human capital which neoliberalism is now eroding through its erosion of the educational, medical and communicational infrastructures of the welfare state. The paradoxical result is that a technologically-armed corporate order finds itself confronting the trades unionist with an autonomous production plan and a computer network of international contacts; the anti-poverty activist with a micro-watt transmitter and an alternative budget; the reproductive rights worker trained in medical science, scanning the data-banks for genetic patents; the anti-Aids organiser with

camcorder and pharmaceutical expertise; the rioter connected to the Internet--in short, by a force of social labour which will not acquiesce to technological revolution commanded from above, but rather demands the right to direct this epochal transformation from below.

Moreover, although capital clearly attempts to limit and divide access to the social knowledges vital to technoscientific power, it should not be assumed that this division and fragmentation always succeeds. Indeed, the globalisation process described in Chapter 6 is in large part unfolding as a story of capital's failure to maintain such segregation. In an era when Silicon Valley janitors can access email to embarrass the computer companies they are striking against, and the World Wide Web carries the messages of Zapatistas and East Timorese resistance fighters, it is clear that the wretched of the earth are neither entirely outside the mechanisms high-technology production, or (more importantly) completely powerless to reappropriate them.⁵⁵ The question of whether capital will successfully segment post-Fordist labour power, or if, on the contrary, rebellious subjects will break down these barriers to establish new alliances, lies at the core of what I call "the contest for general intellect." In this contest the contemporary proletariat fights to actualise "general intellect," not according to the privatising, appropriative logic of capital, but in ways that are deeply democratic and collective, and hence truly "general."

Virtual Universities

This account of the cycles and circuits of struggle in high-technology capitalism was written in an academic context. It is therefore only appropriate to end by considering what the analysis of "general intellect" might mean for those specifically and particularly intellectual labourers who teach and study at universities.⁵⁶ For no site could be more vital

to capital's harnessing of collective intelligence than academia. Over the last twenty-five years, it has been reshaped by an inexorable dialectic. Capitalist industry, mutating into its informational phase, has become more intellectual; Microsoft calls its central production facilities a 'campus.' Simultaneously, universities have become more industrial, acting as ancillary research and training facilities for capital's overall project of high-technology development: Academia, Inc.

This advancement of "corporate-university partnership" has as its aim what David Noble, North America's most trenchant critic of this union, terms "the systematic conversion of intellectual activity into intellectual capital, and, hence, intellectual property."⁵⁷ As Noble points out, this process has passed through a series of phases. In the first stage, unfolding through the 1970s and 1980s, the research activities of the university were effectively commercialised. This was accomplished partly through the fostering of industry sponsored or targeted programs at the expense of basic research; partly through the installation of research parks and other entrepreneurial experiments on campus sites; and partly by legal changes that give post-secondary institutions an interest in merchandising patents resulting from faculty research. The second stage in the university-corporate merger, however, has only appeared during the 1990s, with the drive towards the 'virtual university,' based on large-scale, computer-assisted, tele-learning--a development which, Noble says, has as its aim nothing less than the commodification of the university's teaching function.

Virtual university experiments, now widespread in both the US and Canada, are promoted under the banner of accessibility, innovation and inevitable technological progress. But, Noble argues, they are really concerned with "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.”⁵⁸ At the core of this process is a classic industrial strategy of deskilling and automation, downloading instructor’s courses into reusable software packages over whose use they surrender all pedagogical control. Experiments in this direction typically involve the universities in complex partnerships with computer corporations, carrier companies and edutainment providers. These commercial interests look to the virtual university as a market for hardware and software products, and educational software as a saleable on-line commodity. For university administrators, virtual universities offer a dramatic way of cutting labour costs and centralising managerial control. This is accomplished either by the simple elimination of the faculty whose knowledge has been extracted in digital form, or, in the case of the remaining live instructors, through an envelopment in multiple on-line teaching requirements, complete with endless email solicitations, Web site preparations, and monitored electronic activities. Although there is an almost complete lack of substantial evidence as to the pedagogical benefits of computerised education, this does not deter the rush to convert universities into what Noble scathingly terms “digital diploma mills.”⁵⁹

Those who have followed the cycle of capitalist restructuring and class recomposition outlined in this book will not be surprised to hear that the “virtualising” of universities has already provoked resistance. At both the University of California Los Angeles, and at the University of British Columbia, students have opposed the additional fees that universities impose to implement such high-tech schemes. And at Canadian universities, such as York and Arcadia, faculty have struck to maintain control over

teaching methods in the face of mounting administrative attempts to technologically control their work.⁶⁰

These resistances should be supported and extended. But it is also important to ask whether there are any aspects of the “virtual university” agenda, and the larger process of academic-corporate fusion of which it is part, which offer not just threats, but opportunities. Writing in a European context, Negri and Lazzarato suggest that this might be the case. In the era of the ‘ivory-tower,’ they say, when universities were only partially integrated into capitalism, or marginal to its central functions, academics appeared (however much this actually mystified real interconnections) to be removed from industrial activity and its attendant class-conflicts. It was from this position of apparent exteriority that the intellectual could commit or engage himself with political movements. From the end of the Second World War, however, this distance began to rapidly diminish. Today, when the distance separating the university from business has sunk to virtually zero, university teachers find themselves unequivocally involved in capital’s appropriation of “general intellect.”

These changed conditions, Negri and Lazzarato suggest, creates the grounds for a new relation between dissenting academics and oppositional social movements. Rather than descending from the heights of the university to commit themselves to a cause largely external to their daily experience, possibilities emerge for academics to make more “transverse” connections.⁶¹ Academics perhaps lose some pretensions as the bearer of great truths and grand analysis, but become the carriers of particular skills, knowledges and accesses useful to movements in which they participate on the basis of increasing commonalities with other members of post-Fordist “mass intellect.”⁶²

I would add that the matrix for these connections are the new movements of social unrest. Participation in these movements pull academics and students into contact with other public service workers protesting cutbacks, wider labour and trades unionist organisations, and the many diverse constituencies surging against capital's agenda of high-technology austerity. Out of such contacts comes a corporate-university interaction very different from that which capital intends—one which disseminates opposition to corporate rule from the streets back onto the campuses, and again from the campuses out onto the streets.

The possibility of such a counterflow exists because, to effectively harness mass intellect to accumulation, capital must maintain a certain degree of openness within the universities. Part of what business seeks in its invasion of academia is the creativity and experimentation of social 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 unavoidable condition of an economic order based on general intellect gives a limited but real porosity to universities. This porosity can be exploited by dissident academics--to research and teach on topics of value to social 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.

The administrative imposition of computers and other high-technology on the classroom should sometimes simply be opposed as pedagogically destructive. But in other cases--and sometimes simultaneously-- it is possible to recapture the virtual apparatus for alternative purposes. It should be remembered that students and academics played a major part in the unauthorised creation of the Internet that took the nascent technology of computer-mediated communication beyond the unilateral control of the military-industrial complex, and opened it to a popular use that blindsided corporate planning. Subsequently, students have continued to use the networks for subversive purposes. To give just one example, in spring of 1994 Latino and Chicano students at the Universities of Michigan, Colorado, Nebraska and numerous sites in California erupted in hunger strikes and occupations. They demanded new programs, anti-racist initiatives, grape boycotts in support of farmworkers, and the naming of buildings in memory of Caesar Chavez. Their protests were extensively connected and co-ordinated by computer-communications facilitated by sympathetic librarians, faculty and union organisers.⁶³ Similarly, 1995 and 1996 saw the email-co-ordination of multi-campus protests against reductions in student aid and rising tuition fees both in Canada and the US.⁶⁴

More broadly, it is clear that much of the circulation of oppositional content on the Internet today is conducted from academic centres by students and teachers, acting as relays to wider constituencies. Noble would be the first to appreciate the irony that his denunciations of "digital diploma mills" have been primarily distributed through by way of email and electronic publications. In the era of mass intellect, a purely Luddite stance is not enough. To grasp the tactical and strategic chances presented by capital's failure to

control the technological dynamics it has set in motion, activists must be, as Dorothy Kidd and I once put it, “Luddites on Mondays and Fridays, cyberpunks the rest of the week.”⁶⁵

Conclusion

In academia, as elsewhere, labour power is never completely controllable. To the degree that capital uses the university to harness general intellect, insisting its workforce engage in life-long learning as the price of employability, it runs the risk that people will teach and learn something other than what it intends. In my own practice, a crucial aspect of teaching that “something other” is to address critically the utopian promises of information revolution examined at the beginning of this book.

It is both very important, and relatively easy, to demonstrate how hollow these promises have proven over the last three decades: how they have brought the majority of people in Europe and North America not new technologically-generated wealth, but declining or stagnant real wages; how the mirage of increased, enriched leisure has evaporated into rates of unemployment and poverty unimaginable twenty years ago; how the ‘knowledge class’ that was to humanise capital has found itself pink-slipped by its corporate masters, sharing the welfare line with millions of others; how the high-skill, high-tech service jobs are fractional compared to the burgeoning mass of poorly paid and precarious ‘McJobs’; how the ‘co-operative’ workplace is terrorised by downsizing, closures and concessionary roll-backs; how the heralded multiplication of media channels masks an intensifying concentration of ownership; how promises of ‘all information everywhere’ translates into a vast extension of property rights and corporate power. From this point of view, the utopian announced by information revolutionaries is mere fraud.

However, to teach this, unalloyed, can simply reinforce despair and cynicism. Demystification, practiced alone, leads to a dead end--to the assertion of monolithic and unbreakable capitalist power that characterises so much of what passes for Marxism today. The more difficult task is to identify the possibilities of things being other than they are. As Raymond Williams wrote, the crucial challenge is "making hope practical, rather than despair convincing."⁶⁶

For this purpose, I have found the analysis offered by of autonomist Marxism, with its emphasis on the constantly changing and renewed cycle of struggles between capital and labour, particularly valuable. This perspective shows how the information revolution came into being as a result of a social contest, as part of a vast restructuring by capital intended to evade and suppress working class opposition. More importantly, it suggests that this informational restructuring has failed. Rather than pacifying class conflict, digitalisation and genetic engineering only displace capital's constant internal war--so that the lines of contestation now run along the inside of the very technological systems deployed to overcome them.

To contain crisis, capital has been compelled to set in play agents and subjects whose capacities outrun its control. Now, more than ever before, it has "conjured up such gigantic means of production and of exchange" that it becomes like "a sorcerer, who is no longer able to control the powers of the nether world which he has called up by his spells."⁶⁷ If workers' refusal of work has resulted in extraordinary levels of automation, the new machine-systems now threaten the viability of the wage economy itself. If local militancies have provoked capital to seek global mobility, the very communication and transportation networks down which it flees provide the threads of new, transnational

solidarities. If people's desires for education and self-development have been made the stuff of a knowledge-for-profit market, collective intelligence turns to criticise the human and environmental costs of this trajectory--and to devise alternatives.

At its present very high level of technoscientific development, corporate power finds itself dependent on levels of co-operative activity, unimpeded communication, and free circulation of knowledge that, far from being easily integrated into its hierarchies, exist in persistent tension with its command. Thus the possibilities that information revolutionaries speak of cannot just be written off as false promises. Rather, they are a refracted and distorted version of real potentialities for a new social order, liberated from the despotic constraints of constant work, denied wealth and destructive accumulation.

However, the actualisation of these hopes demands breaking-through the limits capital currently imposes on human development. I have argued that there are now visible signs of an emergent collectivity refusing the logic of commodification, uprising at the very moment that the world market seems to have swallowed the entire planet. Deepening and expanding this process of recomposition depends on interconnection between many and disparate movements at different points along capitalism's circuits. Ironically, the conversations necessary for creation of the new combination are now being conducted across the world-spanning communication networks that information-age capital has itself created. It is as a contribution to that circulation of struggles that this book is offered.

Notes

¹ Karl Marx, Grundrisse (Penguin: Harmondsworth, 1973) 699-743.

² Marx, Grundrisse 705.

³ Marx, Grundrisse 694, 705, 706, 709,

⁴ Marx, Grundrisse 706.

⁵ Marx, Grundrisse 692.

⁶ Marx, Grundrisse 694.

⁷ Marx, Grundrisse 700.

⁸ Some of the writings of this group can be found in in the collection edited by Paolo Virno and Michael Hardt, Radical Thought in Italy: A Potential Politics (University of Minnesota: Minneapolis, 1996).

⁹ Paolo Virno, "Notes on the General Intellect," Marxism Beyond Marxism, ed. Saree Makdisi, Cesare Casarino, & Rebecca E. Karl (London: Routledge, 1996) 268.

¹⁰ Virno, "Notes on the General Intellect" 268.

¹¹ Virno "Notes on the General Intellect" 270.

¹² Virno "Notes on the General Intellect" 270.

¹³ Antoni Negri "Constituent Power," Common Sense. 16 (1994): 89; also in Virno and Hardt 213-224.

¹⁴ Maurizio Lazzarato and Toni Negri, "Travail immaterial and subjectivite," Futur Antérieur 6: (1994) 86.

¹⁵ Virno "Notes on the General Intellect" 270.

¹⁶ Jean-Marie Vincent, "Les automatismes sociaux et le 'general intellect.' Futur Antérieur 16 (1993):121 (my trans.).

¹⁷ Vincent 121.

¹⁸ Vincent 123.

¹⁹ Maurizio Lazzarato, "General Intellect: Towards an Inquiry into Immaterial Labour," Immaterial Labour, Mass Intellectuality, New Constitution, Post Fordism and All That . . . (Red Notes: London, 1994) 1-14. See also Lazzarato and Negri, "Travail immaterial and subjectivite," 86-99, and Lazzarato, "Immaterial Labor," in Virno and Hardt, 133-150.

²⁰ Lazzarato, "General Intellect" 4.

²¹ Negri and Lazzarato, "Travail immaterial and subjectivite" 86.

²² Harland.Prechel describes such a situation in his "Transformations in Hierarchy and Control of the Labor Process in the Post-Fordist Era: The Case of the U.S. Steel Industry," The Labor Process and Control of Labor: The Changing Nature of Work Relations in the Late Twentieth Century, Berch.Berberoglu (Westport: Praeger, 1993) .In the steel plants he examines workers are required to communicate, interact and participate, but only within certain predetermined parameters is embodied in the various forms of "premise" or "alogorithmic.control" associated with informatic production systems. In "premise control," top management calculates cost-efficient ways to conduct each step in the operation: these are then transmitted as rules through the computer system. Parameters within which choices can be made are already embedded in the programs directing production Responsibility thus take the form of adjustments within a pre-set process, rather than control over it. Command resides at the level of the total system, so that the autonomy

bestowed on the parts is strictly limited. As Prechel puts it in his study of the post-Fordist US steel industry, management can thus "centralise command, while decentralising responsibility for the decision," pushing responsibility down the organisational hierarchy, while maintaining control at the top. It is this sort of "premise ontrol" which allows some companies to devolve responsibilities from middle level and line-management to the shop floor, while still maintaining ultimate authority firmly within the control of upper level management. This creates a paradoxical position where, while the worker may indeed be 'skilled' this skill is divorced from any individual or group 'control' over the production process. On this point see also Steven Vallas, Power in the Workplace: The Politics of Production at AT & T (New York: State University of New York, 1993).

²³ Lazzarato "General Intellect," 6.

²⁴ Lazzarato "General Intellect" 5-6.

²⁵ Lazzarato "General Intellect" 6-7.

²⁶ Franco Barchiesi, online, Internet, autop-sys, 5 Apr 1996.

²⁷ Maurizio Lazzarato, "<<Pas de sous pas de totos!>>: La greve des ouvriers Peugeot." Futur Antérieur 1 (1990): 63-76; "Les caprices du flux--les mutations technologiques du point de vue de ceux qui les vivent," Futur Antérieur 4 (1992) 156-165.

²⁸ Cited in Massimo De Angelis, "The Autonomy of the Economy and Globalisation," Vis-A-Vis, Winter 1996, online, available from http://jefferson.village.Virginia.EDU/~spoons/aut_html/glob.html

²⁹ Peter Downs, "Striking Against Overtime: The Example of Flint." Against the Current 54 (1995):7-8; Jane Slaughter, "Addicted to Overtime," The Progressive. April. 31-33 (1995).

³⁰ Kim Moody, Workers in a Lean World: Unions in the International Economy (London: Verso, 1997) 278.

³¹ See Thomas Greven, "Can We Convert Defense Jobs to Peacetime Uses," Labor Notes Nov. 1992. 7; Carl. Boggs, "Economic Conversion as a Radical Strategy: Where Social Movements and Labour Meet," Building Bridges: The Emerging Grassroots Coalition of Labour and Community, ed. Jeremy Brecher and Tim Costello (NewYork: Monthly Review, 1990) 302-310.

³² The concept of "socially useful production" is usually associated with the famous shop-stewards' movement at the Lucas plant of British aerospace in the 1970s. See Hilary Wainwright, Arguments for a New Left: Answering the Free Market Right (Oxford: Blackwell, 1994).

³³ "Autonomous production" is a term used by Japanese workers who for eight years occupied and ran a high-tech Toshiba plant. See the discussion in Chapter 5, and also Ken Tsuzuku, "Presentation to the 1991 Labor Notes Conference," in "A Conference on Labour and Team Concepts." Proc. of a Conference Co-Sponsored by Capilano College Labour Studies Programme and Vancouver & District Labour Council. Vancouver, 18-19 Oct. 1991.

³⁴ Vincent, 127.

³⁵ Negri, "Infinite de la communication/finitude du desir," *Futur Antérieur* 11 (1992/93): 5-8 (my trans.).

³⁶ Negri, "Infinite de la communication," 7.

³⁷ Maurizio Lazzarato and Antonio Negri, Le Bassin de Travail Immateriel (B.T.I.) Dans La Metropole Parisienne: Definition, Recherches, Perspectives (Paris: Tekne-Logos, 1993).

³⁸ Maurizio Lazzarato, "La <<Panthere>> et la communication." Futur Antérieur 2 (1990): 54-67 (my trans.)

³⁹ For a valuable discussion of the social subjectivities emergent in cyberspace, see Harry Cleaver, "Marxian Categories, the Crisis of Capital and the Constitution of Social Subjectivity Today," Common Sense 14 (1993): 32-57.

⁴⁰ Chris Carlson "The Shape of Truth to Come," Processed World 32 (1994): 32-34.

⁴¹ Carlson, 32.

⁴² "How the Net Killed the MAI." The Globe and Mail, 29 April, 1998, 1.

⁴³ "How the Net Killed the MAI." The Globe and Mail, 29 April, 1998, 1.

⁴⁴ "How the Net Killed the MAI." The Globe and Mail, 29 April, 1998, 1

⁴⁵ "How the Net Killed the MAI." The Globe and Mail, 29 April, 1998, 1

⁴⁶ Negri "Constituent Republic," 88, 93-94.

⁴⁷ Virno, "Notes on the General Intellect," and also "Virtuosity and Revolution: The Political Theory of Exodus," in Virno and Hardt, 189-213.

⁴⁸ This discussion is so far largely unpublished, at least in English. My account of it draws on discussions on the autop-sys email group, and amongst the "Infra-Reds" collective in Vancouver.

⁴⁹ Hardt and Negri 280.

⁵⁰ Hardt and Negri 280.

⁵¹ Hardt and Negri 280.

⁵² Michael Hardt and Antonio Negri, Labor of Dionysus: A Critique of the State Form (London: Minneapolis, 1994) 280.

⁵³ Hardt and Negri 280.

⁵⁴ Ed Emery, "No Politics Without Inquiry: A Proposal for a Class Composition Inquiry 1996-7," Common Sense 18 (1995): 1-11.

⁵⁵ A comrade close to Futur Anterior but living in the East End of London remarked to me that unemployed black youths in the neighbourhood were, through involvement in rap, reggae and other music immersed in highly technological and "immaterial" networks of production, taping, mixing, sampling pirating, in a field which constituted one of the most dynamic sectors of the contemporary cultural industry, and were doing so sometimes in a politicised and oppositional way.

⁵⁶ Negri and Lazzarato, "Travail immaterial and subjectivite" 88

⁵⁷ David Noble, "Digital Diploma Mills,"

http://www.firstmonday.dk/issues/issue3_1/noble/index.html.

⁵⁸ Noble, "Digital Diploma Mills."

⁵⁹ Noble, "Digital Diploma Mills."

⁶⁰ Noble, "Digital Diploma Mills."

⁶¹ Negri and Lazzarato, "Travail immaterial and subjectivite."

⁶² The change Michel Foucault describes as the shift from the "universal" to the "specific" intellectual catches something of this transition. See his Power/Knowledge (New York: Pantheon, 1980)

⁶³ Roberto Rodriguez, "Information Highway: Latino Student Protesters Create Nationwide Link Up." Black Issues in Higher Education 16 June(1994), online, Internet, ACTIVE-L, 5 Aug. 1994.

⁶⁴ "Students Fight the Contract," Progressive.16 May 1995, n.p.

⁶⁵ Dorothy Kidd and Nick Witheford, "Counterplanning From Cyberspace and Videoland: or,

Luddites on Monday and Friday, Cyberpunks the Rest of the Week," paper presented at "Monopolies of Knowledge: A Conference Honoring the Work of Harold Innis," Vancouver, 12 Nov. 1994.

⁶⁶ Raymond Williams, "The Politics of Nuclear Disarmament," Exterminism and Cold War (London: New Left Review, 1982), 85.

⁶⁷ Karl Marx and Frederick Engels, The Communist Manifesto (New York: Washington Square, 1969) 34.