Globalization, Neo-liberalism, and the Changing Face of Corporate Hegemony in Higher Education

WILLIAM CARROLL AND JAMES BEATON

Current trends of capitalist globalization and neo-liberal policy are transforming public institutions such as universities. As the voices of corporate capital become strongly registered within the university practices of governance, teaching, research, etc., academe is becoming corporatized and universities are becoming key ancillaries of production.[1]

One site where the voices of corporate capital may hold sway is the university board of governors, the highest level of authority within Canadian universities.[2] Although research has established a pattern of cross-membership between university boards of governors and corporate boards of directors, studies have relied on data from the 1970s and earlier.[3] Here, we analyze the network of ties between the top 250 Canadian corporations and Canadian university boards of governors in 1976, when the current wave of globalization and neo-liberalism was just beginning to build, and 1996, the most recently available data at the time of writing.

Our objective is to map the structure of corporate-university relations at the level of governance boards, as a means of highlighting the changing architecture of capitalist-class power in the field of higher education. Such a mapping project, however, must first consider the context of contemporary relations between corporations and universities.

Globalized Capital and Higher Education It is well known that the rise of neo-liberalism and the internationalization of economies have altered the power of corporate capital and the ability of states to regulate business and maintain social services. As global markets discipline state practices, public institutions such as universities adopt as their *modus operandi* business principles increasingly detached from democratic accountability. The privileging of markets has increased the acceptance of corporate ideals in organizing both society and public institutions.[4]

Although neo-liberal regimes may reduce their social and redistributive Keynesian/welfare role, they still promote economic development through supply-side policies.[5] Higher education figures in this scenario: key activities such as research and skills development are viewed as strategic components of a competitive economic base needed to attract globally mobile investment. The flows of capital and labour power that wash over national boundaries are moments of an increasingly reflexive accumulation process appropriating new forms of knowledge and technology and new subjectivities, a process that surrounds and penetrates academe. With globalization, market-relevant disciplines and professions become favoured, intellectual property rights become a strategic resource, and relationships tighten between corporations and state agencies responsible for research—hence the apt phrase "academic capitalism."[6]

The importance placed by business and government on research, development and training designates universities as centres for profit, and current efforts to strengthen the relationship between universities and business must be understood in that light.[7] One of the most significant developments has been the identification of the campus as a site for creating or enhancing the profit-making capacity of individuals, businesses or the country itself.[8] Within this neo-liberal discourse, the products of universities—knowledge and credentialed labour-power—are commodities that flow into circuits of capital accumulation in a tendentially international economy, improving prospects for local and national competitiveness. The current transformation of higher education forms part of a larger complex of neo-liberal hegemony which asserts that public institutions are best operated on market principles.[9]

Within the prevailing neo-liberal framework, the state has been reducing its financial role in funding higher education while enacting policies that promote private sector partnerships. This suggests a transformed relationship from the Keynesian era, when the state expanded its funding relationship and actively promoted the social and cultural components of higher education, alongside the economic component of "human capital" formation. As universities become viewed as sources of specific skills and technologies that can promote competitiveness on the supply side, and as academic programs operate in an environment of reduced state funding, universities begin to mimic capitalist firms in competing for investment funds. Peter Godsoe, CEO of Scotiabank and a leading corporate activist on higher education, argues that universities must compete, and that the market should determine the success of universities. This neo-liberal vision of post-secondary education has been coupled with an internal transformation of managerial practices within universities, as institutional arrangements have been partially re-fashioned along corporate-capital lines.[10] The focus of our analysis, however, is not on the internal practices that characterize neo-liberal university administration, but on the links between the academic and corporate worlds at the highest levels of governance.

Corporate-University Linkages From the inception of corporate capitalism, corporations have had relationships with universities,[11] although the level of influence has varied depending upon the institution. Many of the newer universities of Canada were created in the post-war effort to build a "human resource" base for the economy. The active role that corporate capitalists played in founding institutions such as York University was symptomatic of the broad consensus in the late 1950s and the 1960s that sheer expansion of higher education was in the national interest.[12]

Since the transition to neo-liberalism began in the 1970s, corporate-university linkages have begun to engender a more direct integration of the university into capitalist production. With Newson and Buchbinder, we can distinguish two types of such linkages: (1) those formed as the university tries to break into markets (responses to internal pressure), and (2) those formed as outside corporations penetrate university boundaries, often in search of enhanced profit (responses to external pressure). The structural supports for corporate-university linkages include research funding bodies, third party networks such as the Corporate Higher Education Forum, and inter-university networks such as Centres of Excellence.[13]

A form of corporate-university linkage not mentioned by Newson and Buchbinder but central to this study is the network generated by overlapping memberships on university and corporate governing boards. Adopting Newson and Buchbinder's internal/external distinction, we may ask as an initial research question: whether the past two decades have witnessed an increasing representation of leading corporate directors on university governance boards (an externally based penetration of university governance) and whether the same period has witnessed a greater tendency for leading university administrators to participate on corporate boards (an internally based reaching-out).

The very nature of certain corporate-university links as "business deals" would seem to favour the involvement of the senior level of university management with the senior level of corporate management. However, such an instrumental interest on the part of specific corporations and capitalists does not displace the broader, hegemonic interest that corporate capital has had in providing cultural leadership through university-board service.

Indeed, the changing social composition of governing boards is indicative of a changing balance of power between intellectuals, administrators and economic and political elites as shifts in class power create spaces for capital to transform the intellectual labour process. In the current era, corporate intellectuals such as Peter Godsoe have deployed a discourse that defines the university as a business organization, with university expenditures considered as social investment that yields some quantifiable output or tangible return in the form of productive knowledge, technical innovation and marketable skills. This form of cultural influence reinforces the material dominance of capital by privileging the standpoint of corporate capital.[14]

It is most appropriate, then, to view corporate-university ties as instances both of bourgeois class hegemony—as leading capitalists participate in the direction of higher education—and of instrumental domination tied to particular corporate interests. Corporate participation in universities may or may not directly produce capital or realize surplus value, but a corporate presence on campus helps legitimate capitalism as a way of life. While participation on university governance boards is always in part honorific, insofar as universities structurally depend on capital the presence of a corporate official will exceed the symbolic, especially if the official participates in the direction of the university's finances.

There is significance, then, in the combination of capital's material and symbolic power in university governance, a combination that exemplifies the reach of the power bloc into institutions of civil society. As university governors, corporate capitalists have input into the financial direction of the university, the programs they or other moneyed interests would be willing to finance, and the type of research and graduates that universities should be producing.[15]

University Governance and the Corporate Elite A number of sociologists have examined corporate-university linkages and their socio-political implications. Michael Useem,[16] in a study based on American data, differentiates the corporate elite according to several criteria such as economic sector (industrial, financial, etc.) and size. He identifies directors holding positions in at least two major corporations as the dominant stratum of the corporate elite. The dominant stratum thus includes individuals who actually carry the ties that exist between dominant corporations—they are the leading corporate interlockers in a given economy. Useem finds that it is overwhelmingly the dominant stratum that maintains board-level interlocks with elite universities. However, specific business strata have formed their own special relationships with other subsets of universities; for instance, high technology firms have interlocked with universities whose strong applied research traditions have yielded important commercial applications—an instance of ties stemming from what Newson and Buchbinder call "external" pressure. Useem also suggests that indirect ties between business and universities are sustained through third-party organizations such as philanthropic foundations, which interlock with both corporations and universities.

Canadian studies confirm that overlapping memberships between governance boards and corporate directorates have a long history, particularly among elite institutions such as University of Toronto, McGill, and Queens—schools that have been integral to the intergenerational reproduction of the elite itself.[17] However, in Axelrod's view the presence of corporate-university relationships seems to have been more a relationship of cultural leadership than an overt attempt on the part of corporations to control research and teaching.[18] Similarly, Porter, writing in the early 1960s, held that participation on university boards by corporate directors is largely honorific—that the role of corporate directors was limited to extracting money from other members of the corporate elite, although their participation on university boards also bolstered upper-class solidarity. A decade later, Clement argued that universities can act as fora for elite members to work out their common concerns and that philanthropic activity such as university board service serves as good public relations for modern corporations.[19]

More recently, Ornstein[20] has examined the interlocking between Canadian corporations and universities between 1946 and 1977. He reports that throughout the period there were enormous differences among universities in the extent of their board ties with major corporations, that the oldest and best endowed universities had the most extensive ties, that the big banks and other financial institutions, plus some industrial companies, were the main corporate contacts, and that Canadian-controlled companies were especially interlocked with universities. The last point suggests that it is the "indigenous" fraction of the Canadian corporate elite, not the "comprador" fraction, that concerns itself with the direction of higher education in Canada. Finally, beginning in the late 1960s and continuing for at least a decade, Ornstein provides evidence of a corporate withdrawal from university boards, reflecting in his view the increasing level of state support of universities, demands for community representation, and eventual corporate disillusionment. Whether this trend continued beyond the 1970s—as state support wilted and as corporate activism around a neo-liberal agenda blossomed—is at present an open question.

Extrapolating from previous work, we may add four research questions to our initial query about trends in corporate-university ties:

1. What kinds of corporate directors are active in university governance—functioning capitalists or advisors to corporations, industrialists or bankers?
2. Are certain schools—well-endowed ones that have historically been centrally involved in educating the upper stratum of the Canadian bourgeoisie—particularly likely to have corporate representation on their boards?
3. Are there differences in the degree to which sectors of corporate capital participate in university governance? Are large chartered banks especially linked? Do certain sectors of industry, particularly so-called high-tech industry, tend to link up with universities?

4. Are corporate-university ties supplemented by third-party ties of relevance to higher education and research—do organizations such as the recently-established Canadian Foundation for Innovation provide further meeting-points for university governors and corporate directors?

With these questions in mind, our concern is to map out continuities and changes in the structure of corporate-university ties across two decades of neo-liberal consolidation.

Method and Data Data were gathered for the top 250 corporations, corporate directors and university board members for 1976 and 1996.[21] Only the directors of more than one top 250 corporation—i.e., the dominant stratum of the corporate elite—were included. By implication, we capture only the top layer of corporate-university ties; ties carried by directors of only one dominant corporation or by directors of non-dominant corporations are excluded from this analysis. As estimates of the extent of corporate-university networking, our results are conservative. We chose our sample of universities on the basis of a combination of total enrollment and regional stratification. The top 20 universities, by enrollment, were chosen for 1976 and 1996. With the exception of three universities the sample was identical in each year. We included all universities that ranked within the top 20 of either year, for a total of 23 institutions. To ensure representation of regions, Memorial University, ranked 21 in 1996, was added. In all, 24 universities were included in the study: three from Atlantic Canada, four from Quebec, 10 from Ontario, four from the prairies, and three from BC.

Our data-collection method was purely archival. Relying on business and biographical handbooks, we recorded the positions of each director of a Top 250 firm, as well as biographical information on those directors who held multiple positions in Top 250 corporations and firm-level information on the corporations.[22]

Findings Between 1976 and 1996, the dominant stratum of the corporate elite shrank by 12%, from 485 people to 425. But despite this decrease in the total number of corporate linkers, the number of corporate linkers active on university boards—whom we call university linkers—remained constant, at 52. With one exception, mentioned below, the 52 corporate directors restrict themselves to one university board each. However, precisely because they are corporate linkers, their participation on university boards generates a more complex network of corporate-university ties, which we now explore by taking up our research questions in greater depth.

Considering first the main occupations of the 52 university linkers in each year, Table 1 shows that in both years a majority of the university linkers were functioning capitalists; that is, insiders (executives or board chairs) of corporations. But there is also a shift to a greater representation of outside directors (31%) in 1996. Moreover, whereas in 1976 nearly all of the outside directors were corporate lawyers, by 1996 the outside corporate directors take in a greater range of occupations, including academic advisors, consultants and *eminence grise*. Such organic intellectuals—not themselves capitalists but implicated both in the accumulation process as well as in the governance of universities—may be said to mediate the relation between capital and universities.[23]

TABLE 1
University Linkers Grouped by Principal Occupation, 1976 and 1996

Principal occupation	1976	1996
Top 250 executive	50	44
Other executive	35	25
Legal advisor	10	12
Academic advisor	2	6
Consultant	0	6
Eminence grise	0	6
State official	0	0
Other outsider	4	2
Total	100%	100%
n	52	52

Most importantly, the three academics serving on university and corporate boards in 1996 were presidents of their respective institutions.[24] Whereas in 1976 university presidents did not serve on multiple corporate boards, by 1996 chief administrators at three universities had joined the corporate elite's dominant stratum.

Another angle from which to view the network is to consider which economic sectors of corporate capital are "represented" by their executives on university boards. Here, our cases include all the university linkers who held an executive position in a corporation, whether the firm be in the Top 250 or outside of it. Table 2 shows a definite shift from heavy representation of industry on university boards to greater presence of capitalists primarily engaged in investment companies. Executives in investment companies, who control operating companies through ownership of financial paper (typically as strategic blocs of share capital), might well be considered prime candidates for university governance, as these beleaguered public institutions turn to private funding sources.

TABLE 2
University Linkers Grouped by Economic Sector of their Home Corporation, 1976 and 1996

Economic sector	1976	1996
Primary industry	12	3
Manufacturing*	34	20
Utilities/communication	10	14
Commerce	7	9
Financial intermediation	24	23
Investment companies	10	31
Property development	2	0
Other	0	0
Total	100%	100%
n	41	35

* Includes construction.

In addressing which governance boards tend to have the most extensive corporate representation, Table 3 displays in its first two columns the number of university linkers who participate in the governance of each university in our sample. While four universities have no corporate linkers on their boards in either year, (Memorial University of Newfoundland, University of Ottawa, University of Saskatchewan and University of Victoria), York and McGill have five or more, and Dalhousie and Toronto also have several corporate linkers on their boards in both years. Hence, three long-established schools, including the major elite anglophone universities in Montreal and Toronto, have maintained a range of corporate connections via their governing boards. York's strong ties to corporate capital date from its inception as a project behind which Toronto-based capital mobilized in the late 1950s.[25] Yet there is also an interesting redistribution of ties. In 1976 only 14 of the 24 universities had corporate interlockers on their boards; by 1996, 19 universities had recruited corporate linkers. We find evidence of a transition from a corporate-university network focused on the boards of a few key universities in the heartland of post-war corporate capital and at the heart of the Canadian bourgeoisie as a social class, to a more dispersed network that takes in a greater range of schools and of regions

TABLE 3
Corporate Linkers and Corporate Contacts for University Governing Boards, 1976 and 1996

	number of linkers		number of corporations	
University	1976	1996[1]	1976	1996
York	8	9	31	25
Montreal	1	9	3	19
McGill	5	5	19	20
Toronto	4	3	9	11
New Brunswick	0	3	0	8
British Columbia	0	3	0	7
Alberta	0	3	0	11
Dalhousie	6	3	17	6
Queens	9	2	33	10
Concordia	2	2	4	4
Calgary	2	2	4	10
Simon Fraser	0	2	0	5
MacMaster	8	1	23	2
Western Ontario	3	1	12	2
Guelph	1	1	3	2
Waterloo	1	1	4	10
Ryerson	1	1	3	9
Laval	0	1	0	2
Manitoba	0	1	0	2
Carleton	1	0	3	0
Bipartite density[2]			.0338	.0331

Rows are sorted by n of corporate linkers on the board of governors in 1996.

[1] Includes two university affiliations for Peter C. Godsoe (Dalhousie and UWO).
[2] Proportion of all university-corporation pairs that are actually interlocked.

UNB presents a good example of the shift from isolation to corporate integration. The UNB Calendar makes it clear that in 1976 governors were local municipal leaders and the like, suggesting no strategy of seeking corporate representation. Yet by 1996 there are three corporate linkers on the board who among them create direct contacts with eight major corporations. The same may be said of UBC, SFU and Alberta, all of which move from isolation to having multiple corporate linkers on board and ties to various corporations. Similarly, while Université de Montréal had only a single corporate linker on its board in 1976, its nine corporate linkers in 1996 create direct ties to 19 major corporations.

Comparing across the decades, then, we find that (1) the network becomes more inclusive of universities in Western Canada (Calgary, UBC), eastern Canada (UNB) and Quebec (Montréal, also Laval), and (2) except for York, McGill and Toronto, there is considerable shifting in the extent to which corporate linkers participate on the boards of specific university boards.

We now turn to the possible differences between sectors of corporate capital in their participation in university governance. In network terms, the number of corporations to which a university is tied is termed the size of its immediate neighbourhood in the bipartite network[26] of corporations and universities.[27] We have seen in Table 3 how size of neighbourhood varies greatly from university to university, and the same holds for the corporations. In 1976, 150 firms had no ties via corporate linkers[28] to the 24 universities; in 1996, 161 corporations were isolated from the bipartite network. On the other side, the Royal Bank of Canada led all corporations with board ties in both 1976 and 1996 to six different universities, including in both years York, McGill and Queens. A total of 16 corporations in 1976 and 15 corporations in 1996 each had ties to three or more universities, and the changing profile of these well-connected companies is instructive. In 1976, 11 of the 16 were financial institutions, including all five big chartered banks. By 1996, only six of 15 were financial institutions. Although three of the chartered banks maintained a strong presence as meeting places for university linkers, the leading financial institutions were less centrally positioned in 1996 than in 1976.

In a more systematic analysis of differences in the degree to which sectors of corporate capital participate in university governance, we considered the mean number of universities with which corporations have board-level ties and found a striking decline in the prominence of financial institutions (see Table 4). In 1976, the fifty leading financial institutions were on average tied to 1.34 of the 24 universities—far more than other companies; but by 1996 their average was indistinguishable from several other sectors. In a similar vein, we compared the mean number of ties to universities for Canadian-controlled and foreign-controlled companies. In 1976, Canadian-controlled firms had substantially more directorate ties to universities, but by 1996 this difference had attenuated somewhat. Interestingly, US-controlled firms also show a drop in their already sparse ties to universities, suggesting that economic continentalization has not been propelling American-controlled corporations toward increased contacts with Canadian universities.[29]

TABLE 4
Mean Number of University Contacts for Top 250 Corporations Grouped by Economic Sector, 1976 and 1996

	1976	1996
Resources	.52	.85
Manufacturing	.49	.54
Utilities-communication	.83	.84
Financial intermediation	1.34	.82
Investment companies	.71	.87
Trade	.27	.30
Real estate	.00	
Other	1.00	.38
All companies	.65	.64
Eta squared	.128	.035

As a final aspect of our analysis of sectoral differences among firms in ties to universities, we considered whether corporations classifiable as "high tech" had by 1996 established comparatively many board-level ties to universities. There is no standard for categorizing industrial corporations as to the extent to which they have incorporated the current wave of advanced technologies into their production processes and products. We produced two general categorizations, one based on a tabulation of the 50 top R&D companies of 1996, the other based on a recent OECD classification of manufacturing sectors by technology-intensity.[30] Of the 162 industrial corporations in the Top 250 of 1996, the former designated 22 firms whose R&D expenditures for 1996 were particularly extensive, and the latter identified 17 industrial firms in high-tech sectors. Combined, these criteria yielded a rough-and-ready high-tech category composed of 29 companies. The relevant comparison group for this category is the remaining 133 industrial corporations of 1996, whose technology intensity is no doubt quite mixed. In Table 5, it is clear that the 29 high-tech firms have established more board-level ties to universities than have other large industrial corporations. But what is most striking is the role of country of control in mediating the high-tech distinction: among the foreign-controlled firms, high-tech firms have no ties to the universities; yet among firms controlled domestically high-tech companies have considerably more ties to universities than do the lower-tech firms. It was companies controlled by Canadian capitalists—such as Nortel Networks, Bombardier and CAE Inc.—that had established board-level ties to major Canadian universities by 1996. Foreign-controlled high-tech companies—such as Pratt & Whitney Canada, IBM Canada and General Electric Canada—are for the most part wholly owned by their parents. Such companies tend to have small, introverted boards that rarely interlock with the domestic corporate network;[31] our results indicate that the directors of such firms who do belong to the dominant stratum of corporate directors do not serve on university boards.[32]

TABLE 5
Mean Number of University Contacts for Top Industrial Corporations Grouped by Nationality of Control and Level of Technological Intensivity, 1996

	Level of technology		
Locus of control	Hi-tech	Lower-tech	Total
Canada	1.38 (21)	0.62 (97)	0.75(118)
Foreign	0.00 (8)	0.44 (36)	0.36 (44)
Total	1.00 (29)	0.57 (133)	0.65 (162)

Ns are in parentheses. A hierarchical ANOVA shows interaction effects significant ($F=7.55$, $p<.01$) and main effects significant ($F=5.079$, $p<.01$). Combined, these effects account for 10.8% of the variance in the n of universities with which firms are interlocked.

Tabulations such as the ones we have just presented shed light on some of the patterns in corporate-university interlocking, but they do not show us the shape of the network itself. To produce such a mapping, we first examined the entire bipartite inter-organizational network of corporations and universities, whose points are organizations and lines are interlocks between corporations and universities. We next considered how many of the organizations formed a dominant component—the largest set in which all points are ultimately reachable by all other points. In 1976, 12 universities and 101 corporations formed a component of 113 organizations, and two other universities were members of separate, small components (Carleton, linked to three firms, and Université de Montréal, linked to three firms). In 1996, 18 universities and 95 firms formed a dominant component of exactly the same size, and McMaster formed a separate component with two firms.

We were particularly interested in viewing the universities and corporations that were located at the heart of the network at each point in time; thus we next narrowed the focus to the organizations that belonged to the biggest block within each dominant component. By definition, every member of a block must be tied to at least two other members of the same block; hence, organizations linked to only one other member of the dominant component are excluded. For the 1976 network, the biggest block contained 45 organizations, including 12 universities and 33 firms; for the 1996 network the corresponding block contained 59 organizations, including 17 universities and 42 firms.[33] Although the big block expands over the two decades, its increased size also renders it sparser. In 1976, the big block of 45 organizations contained 94 lines, for a bipartite density of .237—meaning that nearly a quarter of all the pairs of universities and corporations within it were directly tied through a board interlock. In 1996 the big block contained 109 lines, for a bipartite density of .153. By 1996, more universities and corporations had been drawn together into an integrated block, but any corporation-university pair within this larger block was less likely to be interlocked than were corporation-university pairs in the smaller, tighter 1976 block. We have mapped the interlocking directorates that form these bipartite graphs, with rectangles around the universities and ovals around the chartered banks (see Figures 1 and 2).

One can see in the 1976 mapping (Figure 1) that York, McMaster, Queens, McGill and Toronto (UOFT) held central positions, as did several banks and leading financial institutions, which serve as bridges between multiple universities in the bipar-

Figure 1: Big Block of Corporations and Universities, 1976

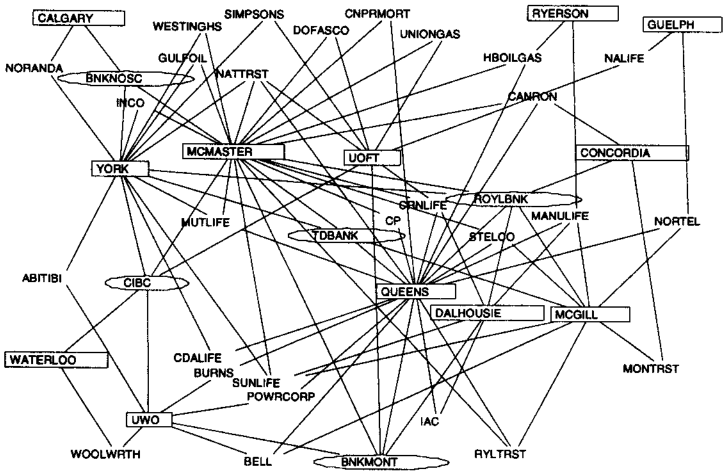
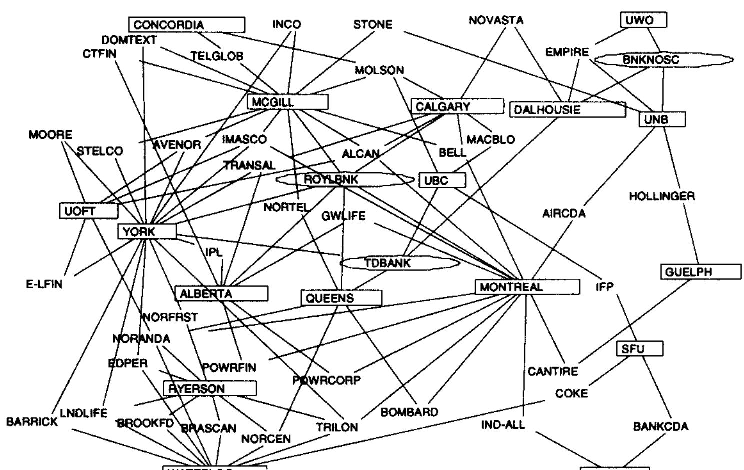


Figure 2: Big Block of Corporations and Universities, 1996



tite network—particularly those located along the Toronto-Montreal axis. By 1996 (Figure 2), York, Montreal, McGill, Ryerson and Waterloo are centrally positioned, and several of the western-based universities, as well as UNB, have become integrated into the network. The Royal and Toronto-Dominion banks can still be described as bridges: they provide meeting-points for university governors from institutions spanning east and west. But overall, banks and life insurers play a less significant integrative role in 1996. One can also detect the presence of the Edper/Brascan corporate empire, whose member firms supply governors to several universities, knitting a set of companies and universities based in Toronto and south-western Ontario into a complex of overlapping board memberships.[34]

Third-Party Organizations as Sites for Elite Integration One additional factor of relevance to the network approach we have taken here is the emergence and growth of third-party organizations which serve as elite fora on higher education and related issues around basic and applied research. Two kinds of such organizations can be distinguished: those sponsored by and linked to the state, and those sponsored by corporate capital.

State Organizations: The Science Council of Canada and the Canadian Foundation for Innovation We were able to identify only one third-party organization for 1976—the federally-sponsored Science Council of Canada, founded in 1966. For 1997, we identified the federally established Canadian Foundation for Innovation. Both groups were mandated with promoting research to serve the national interest. However, the Science Council had an advisory role while the CFI is a semi-autonomous granting agency that has a substantial budget of about $800 million of public funds. Each organization has pursued its objectives for research and development within a particular frame guided by the political-economic arrangements of the day. In the mid-1970s, neo-liberalism was only emerging as a hegemonic discourse and practice, and much Canadian economic thinking employed a dependency theoretical perspective that decried Canadian capitalism's immaturity and emphasized the ideal of "autonomous" development. The Science Council participated in this discourse through its advocacy of reduced foreign corporate control and increased national "technological sovereignty."[35]

The Science Council was not integrated with the dominant stratum as only one of its members in 1976 was a corporate interlocker. In all, five of 25 Science Council members in 1976 were executives in corporations,[36] 16 were academics, and four were consultants. The past two decades have witnessed the disappearance of the Science Council, dissolved in 1992 after massive cuts to its budget as part of the Mulroney government's deficit-reduction campaign of 1985.[37]

By 1997, economic globalization, the information revolution and the ascendency of neo-liberalism presented a post-Fordist context in which a more corporate-centred approach to funding scientific and technological innovation "made sense." The concern was not to promote an independent national economy but to efficiently underwrite the specific kinds of research that will bring greater corporate profitability and competitiveness within the global economy. Industry representation on the CFI ensures that state funds will reward those initiatives that corporate executives recognize as promising from a business standpoint. Research is thus identified as a catalyst for efficient commodity production. Whereas the Science Council advocated a state-facilitated industrial policy, CFI President J. Keith Brimacombe has endorsed the need for business led social development.[38]

In 1997, the 30 members and directors of the CFI included six of our corporate linkers plus ten other designated representatives of private-sector industry, and only seven academics. Since the CFI, with its partners, has the capacity to invest approximately $2 billion in research, there is the potential for this corporate-dominated body to shape research priorities. A condition of a project's receiving CFI funding is that it establish a partnership with private-sector funding sources or research institutes. In obliging researchers to find "matching funds," the CFI places the onus on researchers to convince moneyed donors—chiefly capitalist interests—of the value of their projects.

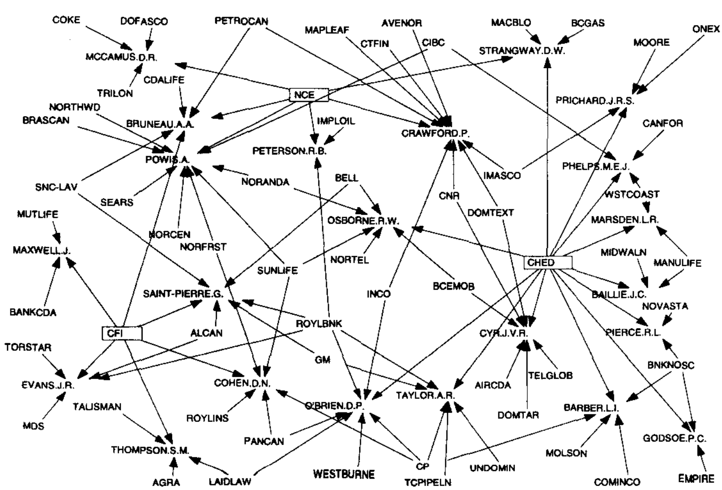
Here, as elsewhere with corporate participation in the general direction of research and higher education, the benefits for capital are more class-wide than directly instrumental. While specific corporations represented on CFI will not necessarily reap profits from research, by exercising leadership in scientific and technological research and development, Canadian corporate capital strengthens its position in the global economy. It consolidates that "decisive nucleus of economic activity" in the absence of which the hegemony of a dominant class collapses.[39]

Corporate Organizations The emergence since the early 1970s of two corporate-sponsored policy groups parallels the development of corporate political activism more generally,[40] which has been an important cultural force promoting neo-liberalism. Like CFI, the National Council on Education (NCE)[41](an affiliate of the

Conference Board of Canada formed in the 1980s), had six corporate linkers among its 1996 membership—one of whom served at the time on the CFI.[42] The Corporate Higher Education Forum (CHEF),[43] formed in 1983 to enable a cross-section of senior executives to discuss issues of mutual interest and of broad societal concern with an equal number of university presidents, included 12 of our corporate linkers among its 1996 membership, one of whom was also a member of the NCE.[44] Just as the Business Council on National Issues and the Fraser Institute, founded in the 1970s, have exercised growing influence in the framing of broad political issues in Canada, the NCE and CHEF have contributed to the formation of a neo-liberal consensus on higher education.

Elite Integration Including the CFI, a total of 22 members of the 1996 dominant stratum were active in one or more of these third-party groups. Three of the 22 were also governors of universities in our sample; thus the third-party organizations drew 19 additional members of the dominant stratum into higher-education policy planning activity. When compared to the single individual that connected the dominant stratum of the corporate elite to the Science Council in 1976, this represents a substantial increase in the extent to which the dominant stratum now participates directly in influ-

Figure 3:The Network of Third-Party Affiliations, 1996



encing the national agenda for higher education/research. In 1976, 53 members of the dominant stratum (11%) were active in university governance or in third-party organizations; in 1996, 71 members of the dominant stratum (17%) were similarly active.

An examination of the network of dominant-stratum members who were active in one or more of the three third-party organizations in 1996 (Figure 3) shows that 22 individuals served on the boards of 57 of the Top 250 corporations and five of the 24 universities. The hypergraph[45] contains 87 points—22 individuals, 57 firms, five universities and three third-party organizations (the last are enclosed in rectangles). Twelve of 22 individuals were functioning capitalists, including ten executives of Top 250 corporations. Among the ten advisors to corporate capital are four university presidents—David Strangway of UBC, Lorna Marsden of Wilfred Laurier (more recently, president of York), J. Robert Prichard of University of Toronto, and Lloyd Barber, retired president of University of Saskatchewan —all members of the CHEF. The network map highlights key integrative roles played by certain well-placed members of this corporate/higher-education elite. Note particularly the various involvements of Drs. Prichard, Strangway and Evans[46]—current or former university presidents—and of Purdy Crawford, Angus Bruneau and Peter Godsoe—leading corporate capitalists—which illustrate the intertwining of corporate capital and higher education at the level of governance and policy-planning.

This complex structure, which complements the network of corporate-university interlocks explored earlier, creates a plethora of contact points between corporate interlockers active in the third-party organizations, and an ongoing basis for forming common viewpoints. In this way, the third-party organizations make their own contributions to corporate hegemony on higher education and related issues.

Conclusions By way of conclusion, we shall restrict ourselves to recapitulating the main findings and their immediate substantive implications. Three points merit emphasis.

Firstly, in connection with Newson and Buchbinder's distinction between the internal and external forces pushing toward corporatization, although we find no absolute increase in the dominant stratum's presence on university boards, there is evidence of increased ties emanating from inside universities, as major university presidents become members of the corporate elite's dominant stratum.[47] Such ties suggest a deepening of corporate-university relations, as chief executive officers of universities and corporations rub shoulders in corporate boardrooms and participate in a common managerial culture.

Secondly, although the overall extent of corporate-university interlocking remained stable across the two decades, there are several ways in which these relations became more inclusive, as the network came to span most of the country, to include most major universities, and to expand substantially in the size of its central block. The increased number of organic intellectuals, who knit together universities and corporations through their participation in governing both, also points to greater integration. So do the many ties linking the dominant stratum to emergent third-party groups. The latter provide new vehicles for business leadership in shaping higher education and research. All this points to a broader class hegemony, as the persuasive force of corporate-capitalist priorities is registered more widely, rather than being largely ensconced within the boards of a few elite institutions.

The new liberalism is indeed a move away from the elitist conservatism that was still evident in the 1970s. In the neo-liberal world, all universities are equally considered sites for producing factors of production in the quest for international competitiveness, and most university boards now include one or more member of corporate capital's dominant stratum. A more inclusive hegemony might well be more persuasive in some quarters, however those committed to alternative visions of higher education can also problematize broadened corporate involvement as an anti-democratic tendency.

Thirdly, this research illustrates how corporate-university relations have evolved with the changing character of Canadian political economy and of the power bloc at the apex of the bourgeoisie. As we have emphasized, neo-liberalism figures heavily in these changes. State retrenchment has induced universities to launch massive fundraising campaigns, facilitated by corporate representation on governing boards. By 1998, for instance, the University of Toronto had offset its 15.3% cut in provincial funding with a \$400 million campaign, spearheaded by executives from Northern Telecom, the Bank of Montreal and other leading corporations.[48] Alongside retrenchment, the federal government has shifted from a Fordist-style science council to a corporate-dominated foundation that enables capital to set the agenda more directly, as academics are pushed into the arms of business partners as a condition for funding.

With regard to the structure of capital, the coming-of-age of a Québecois section of corporate business is part of what lies behind the integration of francophone universities into the national network, as firms such as Bombardier and SNC-Lavalin have risen to prominence and established ties with academe. At the same time, changes in the world of finance—the decline of long-term relationship-based credit (as debt has become "securitized") and the adoption by stock exchanges of new corporate governance rules limiting the representation of banks on client boards—have weakened the pre-eminence of chartered banks as central players in directorate interlocking, and in corporate-university relations. As corporate capital has become less structured around nationally focused financial-industrial axes and more globalized, financial institutions have become less central in the integration of national business systems and more involved in immediate transactions within international circuits of capital.[49] However, the attenuation of financial institutions in the network of corporate-university governance should not be overstated, nor should it be mistaken for a weakening in the power of financial capital, upon which underfunded universities are increasingly dependent.

Meanwhile, since the 1970s a new lot of investment companies has emerged, some of whose executives have been recruited to university boards, possibly in appreciation of their prowess in raising and multiplying funds in the new framework of transaction-based finance. In other cases, university administrators have joined the boards of investment companies, as in Rob Prichard's directorship with Onex Corp. The rise of high-tech companies since the 1970s adds a further nuance to the picture. Although overall, executives in resource and manufacturing firms have come to play a less extensive role in university governance, by 1996 directors of domestically controlled high-tech companies showed a strong elective affinity for university boards. In some degree, indigenous high-tech companies have displaced financial institutions as the form of capital most visibly represented on university boards, perhaps because of strong synergies between knowledge-intensive production processes within "cutting-edge" corporations and the production of knowledge and skills within universities.

We find evidence here of transition from an era in which the top layer of the capitalist class was represented in university governance predominantly by leading lights of banking and heavy industry, to one in which paper entrepreneurship and high-tech industry have a stronger presence in university governance. However, the changes should not be exaggerated—there are major banks whose directors continue to participate extensively in university governance—and in any case we have not examined the actual structure of inter-corporate relations here, only the interface between corporate and university governance. What seems clear is that universities are becoming more integrated into the world of corporate capital as governance on both sides of the university/corporate nexus responds to contemporary capitalism's reliance on neo-liberal policy, technology-intensive production, and more globalized structures of accumulation.

Appendix 1: Key to Mnemonics Used in the Network Diagrams

Corporations

ABITIBI	Abitibi-Price Inc
AGRA	AGRA Inc
AIRCDA	Air Canada
ALCAN	Alcan Aluminum Ltd
AVENOR	Avenor Inc
BANKCDA	Bank of Canada
BARRICK	Barrick Gold Corp
BCEMOB	BCE Mobile Communications Inc
BCGAS	BC Gas Inc
BELL	BCE Inc.
BNKMONT	Bank of Montreal
BNKNOSC	The Bank of Nova Scotia
BOMBARD	Bombardier Inc
BRASCAN	Brascan Ltd
BROOKFD	Brookfield Properties Corp
BURNS	Burns Foods Ltd.
CANFOR	Canfor Corp
CANRON	Canron Limited
CANTIRE	Canadian Tire Corp Ltd
CDALIFE	The Canada Life Assurance Co
CIBC	Canadian Imperial Bank of Commerce
COKE	Coca-Cola Beverages Ltd.
COMINCO	Cominco Ltd
CP	Canadian Pacific Ltd
CRNLIFE	Crown Life Insurance Co
CTFIN	CT Financial Services Inc
DOFASCO	Dofasco Inc
DOMTAR	Domtar Inc
DOMTEXT	Dominion Textile Inc
E-LFIN	E-L Financial Corp Ltd
EDPER	The Edper Group Ltd
EMPIRE	Empire Co Ltd

GM	General Motors of Canada Ltd
GULFOIL	Gulf Oil Canada
GWLIFE	The Great-West Lifeco
HBOILGAS	Hudson's Bay Oil & Gas Company Ltd.
HOLLNGER	Hollinger Inc
IAC	IAC Limited
IFP	International Forest Products Ltd
IMASCO	Imasco Ltd
IMPLOIL	Imperial Oil Ltd
INCO	Inco Ltd
IND-ALL	Industrial-Alliance Life Insurance Co
IPL	IPL Energy Inc
LAIDLAW	Laidlaw Inc
LNDLIFE	London Insurance Group Inc
MACBLO	MacMillan Bloedel Ltd
MAPLEAF	Maple Leaf Foods Inc
MD	MDS Inc
MIDWALN	Midland Walwyn Inc
MANULIFE	Manulife Financial
MOLSON	The Molson Cos Ltd
MONTRST	Montreal Trust
MOORE	Moore Corp Ltd
MUTLIFE	The Mutual Group
NALIFE	North American Life Assurance Co.
CNR	Canadian National Railway Co
NATTRST	National Trustco Inc
NORANDA	Noranda Inc
NORCEN	Norcen Energy Resources Ltd
NORFRST	Noranda Forest Inc
NORTEL	Northern Telecom Ltd
NORTHWD	Northwood Forest Industries Ltd
NOVA	NOVA Corp
CNPRMORT	Canada Permanent Mortgage Corp.
ONEX	Onex Corp
PANCAN	PanCanadian Petroleum Ltd
PETROCAN	Petro-Canada
POWRCORP	Power Corp of Canada
POWRFIN	Power Financial Corp
ROYLBNK	Royal Bank of Canada
ROYLINS	Royal Insurance Co of Canada
RYLTRST	Royal Trust Company
SEARS	Sears Canada Inc
SIMPSONS	Simpsons Ltd.
SNC-LAV	SNC-Lavalin Group Inc
STELCO	Stelco Inc
STONE	Stone-Consolidated Corp
SUNLIFE	Sun Life Assurance Co. of Canada
TALISMAN	Talisman Energy Inc
TDBANK	The Toronto-Dominion Bank
TELGLOB	Teleglobe Inc
TORSTAR	Torstar Corp
TCPIPELN	TransCanada Pipelines Ltd
TRANSAL	TransAlta Corp
TRILON	Trilon Financial Corp
UNDOMIN	United Dominion Industries Ltd
UNIONGS	Union Gas Ltd.
WESTBURNE	Westburne Inc

WESTINGHS	Westinghouse Canada Ltd.
WOOLWRTH	F.W. Woolworth Company Ltd.
WSTCOAST	Westcoast Energy Inc

Universities

ALBERTA	University of Alberta
UBC	University of British Columbia
CALGARY	University of Calgary
CONCORDIA	Concordia University
DALHOUSIE	Dalhousie University
GUELPH	University of Guelph
LAVAL	Laval University
MCGILL	McGill University
MCMASTER	McMaster University
MONTREAL	University of Montreal
UNB	University of New Brunswick
UOFT	University of Toronto
QUEENS	Queens University
RYERSON	Ryerson Polytechnical
SFU	Simon Fraser University
WATERLOO	University of Waterloo
UWO	University of Western Ontario
YORK	York University

Third-Party Organizations

CFI	Canadian Foundation for Innovation
CHEF	Corporate Higher Education Forum
NCE	National Council on Education

Note: Corporations that appear in the network diagrams for both 1976 and 1996 are listed according to the more recent name (e.g., TransAlta Utilities, known as Calgary Power in 1976, is listed as TransAlta).

Notes

1. See David Noble, "Digital Diploma Mills. The Automation of Higher Education," *Monthly Review* 49/9 (1998), pp 38-52 and Janice Newson and Howard Buchbinder, "Corporate-University Linkages in Canada: Transforming a Public Institution," *Higher Education* 20 (1990), pp. 355-379.
2. It is useful at the outset of this analysis to consider the role and purposes of the Board of Governors in Canadian universities. A.D. Gregor (in "The Universities of Canada," *Commonwealth Universities Yearbook 1997* (London: Association of Commonwealth Universities, 1998)) describes the Canadian university board as a body that normally "attends to management of the university, to its relationship with government and the general community, and to the planning of its resources and programs." Ernst B. Benjamin, Ken McGovern and Guy Bourgeault (in *Governance and Accountability: The Report of the Independent Study Group on University Governance* (Ottawa: Canadian Association of University Teachers, 1993)) point out that while the principal statutory obligation of the board is to ensure the university's fiscal well-being, "it is obvious that this can occur only in circumstances in which the board understands that, in setting the budget, they are establishing the academic priorities of the university as well." (p.31) While university boards typically include representatives of stakeholders within the institution there is also provision for appointments from "the

community," usually by provincial governments (p. 34). The corporate-university interlocks we map out here stem from the latter appointments, as the "business community" often stands in for the community, "a state of affairs that is to some extent explained by the requirement that there be present on the board individuals capable of circumnavigating through the various minefields involved in university financing." (p. 36).

3. See for example. Michael Useem "Business Segments and Corporate Relations with U.S. Universities" *Social Problems* 29/2 (1981), pp. 129-41; Michael D. Ornstein, "Corporate Involvement in Canadian Hospital and University Boards, 1946-1977," *Canadian Review of Sociology and Anthropology* 25/3 (1988), pp. 365-388.
4. Stephen Gill, "Knowledge, Politics and Neo-liberal Political Economy" in Richard Stubbs and Geoffrey R.D. Underhill, (eds), *Political Economy and the Changing Global Order* (Toronto: McLelland and Stewart Inc., 1994), p. 80; Stephen Gill, "Theorizing the Interregnum: The Double Movement and Global Politics in the 1990s" in Bjorne Hettne, (ed.), *International Political Economy: Understanding Global Disorder* (Halifax: Fernwood Publishing, 1995).
5. Bob Jessop, "Towards a Schumpetarian Workfare State? Remarks on Post-Fordist Political Economy," *Studies in Political Economy* 40 (1993).
6. Sheila Slaughter and Larry L. Leslie, *Academic Capitalism: Politics, Policies and the Entrepreneurial University* (Baltimore: Johns Hopkins University Press, 1997). On reflexive accumulation, see Scott Lash and John Urry, *Economies of Signs and Space* (London: Sage, 1994).
7. Newson and Buchbinder, *Corporate-University Linkages*, p. 367.
8. See Noble, "Digital Diploma Mills," 1998.
9. As Janice Newson observes this has serious implications for future decision making. The market-led transformation has the potential for narrowing the knowledge base and limiting the range of choices that will be available for deciding on political, economic and social alternatives ("Subordinating Democracy: the Effects of Fiscal Retrenchment and University-business Partnerships on Knowledge Creation and Knowledge Dissemination in Universities," *Higher Education* 27 (1994), pp. 141-161).
10. See Peter Godsoe "Canadian Universities: Competing to Win." Address to the Canadian Club 4 March 1996, Scotiabank. The internal transformation of universities is explored in A. Marguerite Cassin and J. Graham Morgan, "The Professorate and the Market-Driven University: Transforming the Control of Work in the Academy," in William K. Carroll, Linda Christiansen-Ruffman, Raymond F. Currie and Deborah Harrison, (eds.), *Fragile Truths: 25 Years of Sociology and Anthropology in Canada* (Ottawa: Carleton University Press, 1992), pp. 247-60; and Janice Newson, "The Decline of Faculty Influence: Confronting the Effects of the Corporate Agenda," in *Fragile Truths...*, pp. 227-46.
11. See, for instance, Thorstein Veblen, *The Higher Learning in America: A Memorandum on the Conduct of Universities by Business Men* (California: Academic Reprints, 1954).
12. For an analysis of York University see Paul Axelrod "Service or Captivity? Business University Relations in the Twentieth Century" in William A.W. Neilson and Chad Gaffield, (eds.), *Universities in Crisis: A Mediaeval Institution in the Twenty-first Century* (Toronto: The Institute for Research on Public Policy, 1986), p. 50.
13. Newson and Buchbinder, *Corporate-University Linkages*, p. 303.
14. Clyde W. Barrow, *Universities and the Capitalist State: Corporate Liberalism and the Reconstruction of American Higher Education, 1894-1928* (Madison: The University of Wisconsin Press, 1994). pp. 250-54.

15. Even though most university funding in Canada issues from the state and tuition, many recent examples of corporate donations that skew university resources in a business-oriented direction can be cited. See Mark Giberson, "Giving Big," *University Affairs* (June-July, 1997), pp. 8-9; Trevor Cole, "Ivy-League Hustle," *Report on Business Magazine* 14/12 (June, 1998), pp. 34-44.
16. Michael Useem, "Business Segments...," 1981.
17. John Porter reports, "as befits their status in Canadian academic life, McGill University and the University of Toronto have boards which positively glitter with stars from the corporate world." John Porter, *The Vertical Mosaic* (Toronto: University of Toronto Press, 1965), p. 300.
18. Paul Axelrod, *Scholars and Dollars: Politics, Economics, and the Universities of Ontario 1945-1980.* (Toronto: University of Toronto Press, 1982).
19. Porter, Vertical Mosaic, p. 300; Wallace Clement, *The Canadian Corporate Elite* (Toronto: McClelland and Stewart, 1975), p. 251.
20. Ornstein, *Corporate Involvement*, 1988.
21. The university board data for 1976 was previously collected by William Carroll, John Fox and Michael Ornstein. Other data were gathered as part of an ongoing study of globalization and the recomposition of capital, funded by the Social Sciences and Humanities Research Council of Canada. Each corporate Top 250 actually includes the largest 50 financial institutions (ranked by assets), the largest 200 non-financial companies (ranked by revenue), and the half-dozen or so investment companies that hold significant blocs of shares in some of the Top 250 corporations; thus our 1976 "Top 250" includes 257 corporations and our 1996 "Top 250" includes 258. For methodological details, see William K. Carroll, "Globalization and The Recomposition of Corporate Capital: A Cross-national Study." Research Proposal to Social Sciences and Humanities Research Council of Canada (1996).
22. There is another sense in which our findings, particularly for 1996, are conservative indications of corporate- university interlocking. While for 1976 we were able to examine membership lists of university boards and to code each member of the dominant stratum on that basis, for 1996 we relied primarily on biographical sources such as *Who's Who in Canada* and *The Canadian Who's Who*. Only 11 of 425 dominant stratum members were not listed in these sources; however, there is no guarantee that each entry was complete in its listing of university-board affiliations in 1996.
23. For instance, former federal cabinet members Barbara McDougall and Donald Mazankowski are outside directors of four and six dominant corporations respectively, and also outsiders to academe. They bridge the worlds of capital and academe, in an advisory capacity on both sides. On the concept of organic intellectual as applied in the study of corporate directors, see Jorge Niosi, *Canadian Capitalism* (Toronto: James Lorimer, 1981).
24. Elizabeth Parr-Johnston (UNB) is on the board of the Bank of Nova Scotia and the Empire Company; J. Robert Prichard (University of Toronto) is on the board of Imasco, Moore Corp., and Onex Corp.; D.W. Strangway (UBC) is a director of BC Gas and MacMillan Bloedel.
25. Axelrod, *Scholars and Dollars*, 1982.
26. For full explanations of the network-analytic terminology employed minimally here, which also documents the software by means of which our analysis was conducted, see C.J.A. Spenger and F.N. Stokman, GRADAP: Graph Definition and Analysis Package (Gronigen, The Netherlands: iec ProGAMMA, 1989).
27. In this bipartite network, only ties between universities and corporations are considered — interlocks among the corporations are known to be extensive, but are not examined here. See Michael Ornstein, "The Social Organization

of the Capitalist Class in Comparative Perspective." *Canadian Review of Sociology and Anthropology* 26 (1989), pp. 151-77.

28. As usual, we are referring only to ties carried by directors who held positions in multiple Top 250 corporations, i.e., corporate linkers, who make up the dominant stratum of the corporate elite. Other directors of some of these firms, not in the dominant stratum, may well have sat on university boards, but these relations are not considered here.
29. In 1976 the mean number of university contacts per firm was .93 for Canadian-controlled companies, .34 for USA-controlled companies and .50 for British-controlled companies; the corresponding means in 1996 were .79, .22 and .80.
30. See, respectively, *Globe and Mail Report on Business Magazine*, July 1997, p. 100; Thomas Hatzichronoglou "Revision of the High-Technology Sector and Product Classification," STI Working Paper 1997/2 (Paris: Organization for Economic Co-operation and Development, 1997).
31. Michael Ornstein "The Boards and Directors of the Largest Canadian Corporations: Size, Composition, and Interlocks." *Canadian Journal of Sociology* 1 (1976), pp. 411-37; William K. Carroll, *Corporate Power and Canadian Capitalism* (Vancouver: University of British Columbia Press, 1986).
32. Also, although these foreign-owned companies engage in some degree of research and development in Canada, a good deal of that activity tends to be centralized in the head office of the parent firm; hence, it may be that the foreign-held high-tech firms have less of an instrumental interest in Canadian universities than do the domestically controlled high-tech companies.
33. University of Manitoba's ties to Canadian Airlines and United Grain Growers — two structurally marginal firms in the corporate-university network — did not integrate it into the biggest block.
34. Four insiders to the Edper/Brascan group are particularly important in this complex. Trevor Eyton, chair of Brascan, of Edper-Hees and of Trilon, sits on the University of Waterloo board while Jack Cockwell, president of Brascan and of Edper-Hees sits on the Ryerson Polytechnical board. William Dimma, an executive of Trilon, sits on the York University board, as does Timothy Price, president of Edper-Hees. All four are directors of London Insurance. Thus, the boards of York, Ryerson and Waterloo all include leading executives from the Edper-Brascan group — a small world indeed.
35. See Josef Kates, "Technological Sovereignty: A Strategy for Canada," Annual Statement of the Chairman (Ottawa: Science Council of Canada, June 1977); Josef Kates, "Toward International Technological Interdependence," Annual Statement of the Chairman (Ottawa: Science Council of Canada, June 1978).
36. D.A. Chisholm was executive vice president of Northern Telecom; B.G. Coté was CEO of Celanese Canada; J.V.R. Cyr was executive vice president of Bell Canada; A.J. O'Connor was general manager of New Brunswick Power; J.A. Pollock, was president of Electrohome Ltd.
37. John de la Mothe "A Dollar Short and a Day Late: A Note on the Demise of the Science Council of Canada," *Queen's Quarterly* 99/4 (1992), pp. 873-886.
38. Notes for an address by J Keith Brimacombe, President and CEO of the Canada Foundation for Innovation, to the third annual University-Industry Synergy Symposium organized by NSERC and The Conference Board of Canada, 24 October 1997, Richmond, British Columbia, http://www.innovation.ca/english/new/notes.html
39. Antonio Gramsci, *Selections from the Prison Notebooks* (New York: International Publishers, 1971), p. 161
40. Michael Useem, *The Inner Circle* (New York: Oxford University Press, 1984); William K. Carroll, "Canada in the Crisis: Transformations in Capital

Structure and Political Strategy," in Henk Overbeek, (ed.), *Restructuring Hegemony in the Global Political Economy* (London: Routledge, 1993), pp. 216-45.

41. NCE's mandate includes all levels of education, from primary through post-secondary; hence its board brings members of the dominant stratum together not only with academics but with members of various school boards, etc. While 15 of its members were corporate directors or executives and 12 were academic and educational administrators, five were federal or provincial state functionaries, two were professional employees of the sponsoring Conference Board, and three represented, respectively, Decima Research, YMCA Canada, and the Canadian Federation of Labour. As for the CFI, its 30 directors and members included seven representatives of the "non-profit private sector," comprising groups such as the Canadian Cancer Society. Both the CFI and NCE can be described as corporatist organizations which tilt compositionally toward the dominance of big business.
42. Namely Angus Bruneau, an executive with Fortis Inc.
43. Its goals as stated in one of its reports are to promote mutual understanding through the exchange of ideas and points of view; to develop policy statements of mutual interest and concern; to provide a vehicle for corporate and university leadership to reflect upon questions of national significance; and to support programs consistent with the philosophy of the organization. Judith Maxwell, Judith and Stephanie Currie, *Partnership for Growth. The Corporate Higher Education Forum. Montreal.* (1984), pp. 101
44. Namely David Strangway, who in 1996 was Director of the Corporate Higher Education Forum and President of UBC.
45. The graph combines in a single diagram both the individual board members and the boards on which they serve; in this sense it is a hypergraph, whose points describe two distinct levels of analysis — the individual and the organizational.
46. As Chair of Alcan Aluminum as well as Torstar corporation, John Evans has made a particularly seamless transition from the world of academe to that of capital. In 1997 he was also Chair of the CFI.
47. In addition to the three mentioned earlier, it is worth noting that a fourth university president—Lorna Marsden of Wilfred Laurier University (now president of York University) was among the corporate linkers of 1996; however, Wilfred Laurier was judged too small to qualify for our sample, pointing up again the conservative character of our methodology. Also, as we have seen, former University of Toronto President John Evans has moved smoothly into the upper echelons of corporate capital while remaining chair of CFI.
48. Trevor Cole, "Ivy-League Hustle." University of Toronto President Prichard was obliged to apologize to his Governing Board for lobbying the federal government on behalf of Apotex Inc., a firm that had promised the University an "investment" of $55 million (*Toronto Globe and Mail* 16 September 1999, p. A5).
49. On the securitization of debt and the move from relationship-based to transaction-based finance, see J. Armstrong, "The Changing Business Activities of Banks in Canada," *Bank of Canada Review* Spring (1997), pp. 10-38. On the new corporate governance rules see C. Conner, "A New Era in Corporate Governance," *Canadian Business Review* 22(3) Autumn (1995), pp. 16-20. The changing position of Canadian banks in the national corporate network is examined in William K. Carroll, "Recent Globalization and the Changing Structure of Corporate Capital," paper presented at Komazawa University Faculty of Economics, July 1999.