

ATLANTIC CANADIAN CORPORATE

Directors and Their Educational Affiliations: A Spatial Analysis

Sean O'Hagan
Nipissing University

Milford B. Green
The University of Western Ontario

ABSTRACT

Research examining the roles and locations of business leaders, including the boards of directors, makes an important contribution to our understanding of corporations. This study contributes to this field by investigating the spatial relationship between the boards of directors of companies in Atlantic Canada and the universities attended by those individuals. Over one-half of the directors obtained their educations within Atlantic Canada and in many cases within the same city. In this paper, specific consideration is given to cross border alumni. Given the geographical proximity and the presence of prominent business programs in New England, it makes sense that a group of future leaders of Atlantic Canadian companies would obtain their business educations south of the border. The spatial relationship is particularly relevant within economic geography's current dialogue on brain circulation, the circular movement of skilled labour across nations. These experiences can be valuable sources of knowledge accumulation for the original region, provided the expatriates return. This vein of research fits within the concept of institutionalism in economic geography. When individuals leave Atlantic Canada to pursue an education internationally, they are exposed to different institutional structures, both formal and informal. This paper contends that invaluable knowledge is gained, perhaps more valuable than knowledge gained at local universities. The reasoning behind this argument is that local universities maintain and teach similar approaches, which personnel from local firms already know while the outside institutions can offer novel corporate strategies. *Keywords: boards of directors, educational affiliation, institutionalism, brain circulation*

Introduction

The relationship between Canada and the United States spans more than two centuries, with the eventual development of one of the most cooperative international links of the modern world. While it is fashionable to discuss Canada in the context of a globalizing world, history and geography assure a close association between these two countries for continued economic

integration. This paper explores one of these connections, the cross-border relationship between the Atlantic Canadian provinces and the New England region of the United States. Specifically, the intention is to investigate the educational backgrounds of individuals vital to the competitiveness of Atlantic Canadian corporations, the members of boards of directors. We examine the spatial relationships between where directors attended universities and the companies of the boards on which they now serve on.

With specific reference to the cross-border relationship, the intention of this study is to determine if a connection exists between American universities and a group of prominent individuals running Atlantic Canadian companies. Given the geographical proximity and the presence of prominent business programs in New England universities, we argue that it makes theoretical sense for future leaders of Atlantic Canadian companies to obtain their business educations south of the border. But do they? Within the results section, our findings are placed within the context of Saxenian's (2002, 2006) theory of brain circulation where she refers to the circular movement of skilled labor across geographic space. She argues that such circular movement of individuals brings intangible knowledge that proves invaluable for the competitiveness of firms and the regions where they are located.

Brain Circulation, Institutionalism, and Directors of Atlantic Canadian Companies

Saxenian (2002, 2006) and Kuznetsov and Sabel (2006) propose the concept of brain circulation to explain the phenomenon of prominent people leaving a country only to return later once they have increased their knowledge and skill base. Brain circulation is sometimes referred to as the circular movement of skilled labour across nations. The concept diverges from the concept of brain drain, which earlier gained popularity to explain skilled labour emigrating from less developed nations to pursue better opportunities elsewhere. But researchers (Saxenian 2002, 2006; Kuznetsov and Sabel 2006) have recently made a case that brain drain is only one part of the equation. The other component relates to the social contacts and international experience that expatriates gain when working or studying in a foreign country. These experiences and social contacts are valuable resources for the country of origin of these expatriates, provided it is able to tap into them.

Brain circulation has predominantly been used as a partial explanation for the rapid development of semi-peripheral nations such as India, China, and Taiwan. It is argued that the circular movement brings intangible knowledge, which proves valuable for the home country's development. Those cities, regions, and nations that do not take advantage of this flow of people (and the ideas that they bring) continuously rely on internal knowledge. Unfortunately, this insular position continually relegates these places to remain in the periphery.

Saxenian uses the term "technical communities" to explain the link between Silicon Valley and new development areas. She states (2002, 117)

Transnational entrepreneurs—US-educated immigrant engineers whose activities span national borders—are creating new economic opportunities for formerly peripheral economies

O'Hagan: Atlantic Canadian Corporate Directors and Their Educational Affiliations

around the world. Talented immigrants who have studied and worked in the US are increasingly reversing the "brain drain" by returning to their home countries to take advantage of promising opportunities there.

Saxenian applies the concept of brain circulation to networks of scientists and engineers who, when returning to their home country, bring their knowledge with them. This research shows how expatriate talent can contribute to the development of peripheral regions.

While Atlantic Canada would not be considered marginal in terms of global economic activity, the concept of brain circulation can still be applied to this Canadian region and its international links. While the notion of brain circulation was applied to high end technical workers, this paper adopts a somewhat different approach. We argue that brain circulation can be applied to other economic actors such as members of boards of directors of Atlantic Canadian corporations. These senior individuals are carefully selected because of their pivotal positions within firms, especially as these positions relate to corporate strategies and cultures. The concept of brain circulation is extended by examining the educational backgrounds of boards of directors of firms located in Eastern Canada. Particular focus is given to those individuals that left to pursue academic training abroad.

This vein of research fits within the concept of institutionalism in economic geography (Amin 2004; Hodgson 2006; Peck 2005; Saxenian 1994; Storper 1997). Institutions are mechanisms of social order governing the behavior of individuals. The term normally includes formal structures at a spatial scale such as legal rules, property laws, and government policies, as well as informal habits, codes of conduct, and organizational cultures. By doing so, this approach analyzes how institutional characteristics influence the culture of firm behaviors and thereby regional patterns of economic development.

Within this line of reasoning, Granovetter's (1985) embeddedness-network paradigm argues that relationships between individual actors or firms are set within social networks. The spatial significance appreciated by geographers has caused them to take this initial idea and focus on the spatial aspect of this argument. Gertler (1997) for example, compared German and North American producers approach towards equipment maintenance. He argues that institutions are embedded in geographically localized practices. His study equated the casual North American mind-set towards equipment repairs with industrial investment. North American companies pressured by growing their quarterly returns, also managed their equipment with a short term outlook. The result was more frequent machinery break downs when compared to parallel German companies, who employed a long term attitude towards maintaining their equipment.

Maskell and Malmberg (1999) emphasize not only the concept of introducing new institutions, but also removing old ones that hinder competitiveness. Schein (1992) and Schoenberger (1997) add to this line of reasoning by suggesting that firms (and their regions) who want to remain innovative must have leaders who recognize when the culture within the firm becomes old and counterproductive so that they can initiate a new business culture. In this sense, directors of Atlantic Canadian companies that are exposed to institutions outside the region are invaluable.

Within the concept of institutionalism this paper maintains that formal and informal struc-

tures associated with institutions influence the corporate culture of firms, even if they are not accrued within the same region that the firm is located. We argue that key individuals, the directors, bring new knowledge to firms based on their past experiences and training. Perhaps most importantly, we maintain that the social relations and experiences obtained from this past influence their decision making process. From a geographical standpoint, universities, and their host cities and regions, influence knowledge gained by directors. Thus, individuals that leave Atlantic Canada to pursue a university education internationally are exposed to different viewpoints and business paradigms than are available in their home region. This paper contends this knowledge gained provides a competitive advantage, perhaps more valuable than knowledge gained at local universities, to the corporations they serve once they return home. This occurs because local universities reflect established views and procedures of the region and such knowledge and views provide fewer economic benefits in a global economic environment.

Atlantic Canada and New England in the Context of Corporate Activity

Atlantic Canada is comprised of the provinces of Prince Edward Island, Nova Scotia, New Brunswick, and Newfoundland. Generally the region is not considered economically central to the Canadian economy with the region accounting for approximately 6.1 percent of the Canadian gross domestic national product (GDP) in 2008 (Statistics Canada 2008). This level of economic activity is slightly less than one would anticipate based on the region's population, which is approximately 7.3 percent of Canada's total. In comparison, New England (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont) accounts for approximately 5.6 percent of GDP in the United States and 4.7 percent of the population. Therefore, both regions are analogous economically and demographically to their respective host countries.

The two regions have clearly displayed strong historical links economically and still do today. As evidence, the New England region received just over 43 percent of Atlantic Canada total exports to the United States in 2008 (Industry Canada 2008). Atlantic Canada on the other hand maintains a weaker link in terms of this relationship, with 20 percent of the Canadian region's imports coming from their American counterpart (Industry Canada 2008). Thus, knowledge of American business strategies and leadership characteristics would be of obvious consequence to corporate managers in Atlantic Canada.

Data

This study utilizes a comprehensive director dataset for firms based in the Maritimes region of Canada as identified by Financial Post's *Directory of Directors* in the year 2009. This source presents a list of 17,191 Canadian businesswomen and men showing the directorships and offices they hold for 6,875 key Canadian companies. The register of companies includes both publicly traded and privately-owned, with their addresses and the names of their executive officers and directors. Criteria for inclusion of companies in this source include: incorporation in Canada, substantial revenue or assets, and Canadian residency for the majority of the directors.

O'Hagan: Atlantic Canadian Corporate Directors and Their Educational Affiliations

Once a company qualifies for inclusion, its officers and directors automatically meet the criteria for a personal listing. The Directory provides information on the educational attainments of only a portion of directors. The educational data is self-reported and some directors choose not to reveal their degrees if any. Some of course may not have any university education, but they are unusual.

Headquarter City	Total Number of Headquarters	Percent of Headquarters	Total Number of Directors	Percent of Directors	Average Board Size
Halifax, ns	42	26.4	239	27.7	5.7
St. John's, nf	18	11.3	94	10.9	5.2
Moncton, nb	15	9.4	144	16.7	9.6
Dartmouth, ns	13	8.2	55	6.4	4.2
Charlottetown, pei	8	5.0	34	3.9	4.3
Fredericton, nb	7	4.4	50	5.8	7.1
Bedford, ns	7	4.4	30	3.5	4.3
Amherst, ns	4	2.5	12	1.4	3
Saint John, nb	4	2.5	41	4.7	10.3
Stellarton, nb	3	1.9	41	4.7	13.7

NS – Nova Scotia, NF – Newfoundland, NB – New Brunswick, PEI – Prince Edward Island

Table 1. List of headquarter cities and number of directors in each city

Regarding Atlantic Canada, Directory of Directors, maintains a list of 159 companies with a headquarters address in the one of the provinces of Nova Scotia, New Brunswick, Prince Edward Island, or Newfoundland. Table 1 displays those cities with highest number of headquarters. It is not surprising that Halifax, Nova Scotia dominates with the largest number of headquarters. As the economic hub for Atlantic Canada, the city accounts for 43.6 percent of Nova Scotia's GDP and 15.7 percent of Atlantic Canada's GDP (Brender and Lefebvre 2006; Industry Canada 2008). While this is not a temporal study, an important change for Halifax since the year 2000 is a sizeable increase in number of companies recognized in the same publication, Financial Post's *Directory of Directors*. The majority of the increase can be explained by smaller startup companies. For the most part, a second tier of cities makes up the remainder of the list, led by St. John's, Newfoundland, Moncton, New Brunswick, and Dartmouth, Nova Scotia. The number of companies in each of these second tier cities remains relatively unchanged since 2000, with small decreases in St. John's, Newfoundland and St. John, New Brunswick the most notable. While relatively small, these decreases can somewhat be explained by consolidation of economic activity into Halifax. For example, NewTel Communications, headquartered in

St. John's, Newfoundland became part of a larger organization Bell Aliant, headquartered in Halifax.

There are a total of 864 directors identified for the 159 companies for an average size of 5.4 directors per board. As one would expect, Halifax again dominates with the largest number of directors. Table 1 reveals there are changes within the other top nine as Moncton surpasses St. John's for the second largest director counts. In other words, firms located in Moncton have larger boards of directors. For every director the headquarters city was known, while the educational background was available for only 392 (45 percent). Educational results presented in the following section are based on the highest degree obtained.

Results

The analysis begins with a list of the highest cross border links between each Canadian headquarter region and American university region. The importance of geographical proximity is evident as each Canadian region's most important relationship is with American universities from the closest region directly south of the border. Notable to this study, the Maritime-New England link is revealed as the greatest dependency between any Canadian headquarters region and American university region.

Explicitly investigating where all directors of Atlantic Canadian headquartered companies

Company Region in Canada	University Region in the United States	Percent of Company Region Total Links
Maritimes	New England	6.2
Quebec	New England	6.0
Ontario	Mid-Atlantic	5.3
British Columbia	Far West	4.7
Prairies	Rocky Mountain	3.0
Northern Canada	N/A	N/A

Table 2. Top regional relationship between American university region attended by directors and Canadian headquarters

received their educations furthers this spatial significance. Table 3 shows that more than one-half of directors that sat on the boards of Atlantic Canadian companies also attended university within the region. This agrees with O'Hagan, Rice, and Green (2008) who argue a strong geographical correlation between headquarter

and directors personal histories. After the study region, Table 2 indicates a large drop in the number of directors allocated to Ontario, the second largest region for directors to attend a university. Again, a significant drop occurs to New England, the third most important region for directors of companies headquartered in the Maritimes to obtain their educations. Finally, the international link between Atlantic Canadian companies and United Kingdom universities further verifies the geographical bond.

O'Hagan: Atlantic Canadian Corporate Directors and Their Educational Affiliations

Attending University Region	Number of Directors	Percent of Total
Maritimes, Canada	205	52.3
Ontario, Canada	71	18.1
New England, United States	24	6.2
Quebec, Canada	17	4.3
Prairies, Canada	13	3.3
United Kingdom	13	3.3
Mid-Atlantic, United States	11	2.8
British Columbia, Canada	9	2.3

Table 3. Regional relationship between university attended by directors and headquarters located in the maritimes region of Canada

Altering the geographic scale to display results within a city-city framework Figure 1 provides a spatial representation of company city to university city (if within Atlantic Canada) and university region (if not within Maritime provinces) where the number of links is greater than two. While not surprising, the most notable visual feature is the centrality of Halifax. Not only did it possess the most intra-city links (director attend a university and sit on the board of a Halifax company), but was connected to all major cities and regions. Also of consequence is the importance of intra-regional links. As stated earlier, a strong spatial link exists between universities attended and where a director eventually works.

The connections to Quebec and Ontario were expected as they are the closest Canadian regions possessing a considerable number of universities. It was predicted that a greater relationship would exist between New Brunswick companies and Quebec because of the cultural and language similarities. Internationally, the strong presence of United Kingdom alumni sitting on Maritime company boards was a little surprising. Colonial and cultural ties obviously impact this relationship. Finally, the New England results presented previously are confirmed. Companies headquartered in Atlantic Canada maintain a spatial relationship with New England educated directors. Importantly, a broadly distributed relationship is revealed between corporate headquarters from three provinces within Atlantic Canada and universities in New England.

Specifically examining American universities uncovers the dominance of Harvard University with sixteen total director links. Additionally, the importance of Ivy League universities (Harvard, Brown, Dartmouth, Columbia, Yale, Princeton, Cornell and the University of Pennsylvania) is revealed with a total of twenty-one directors. Considering the New England region has twenty-five total links, the Maritimes-New England spatial relationship is highly dependent on Harvard. That being said, five of the top ten American universities in the table are from the New England region, with a further four from New York, a geographically proximate state.

At this time the twenty-five occasions where Atlantic companies maintained directors that attended a New England university will be placed within the context of brain circulation. Birth data is not available through Financial Post's *Directory of Directors* but in order to properly

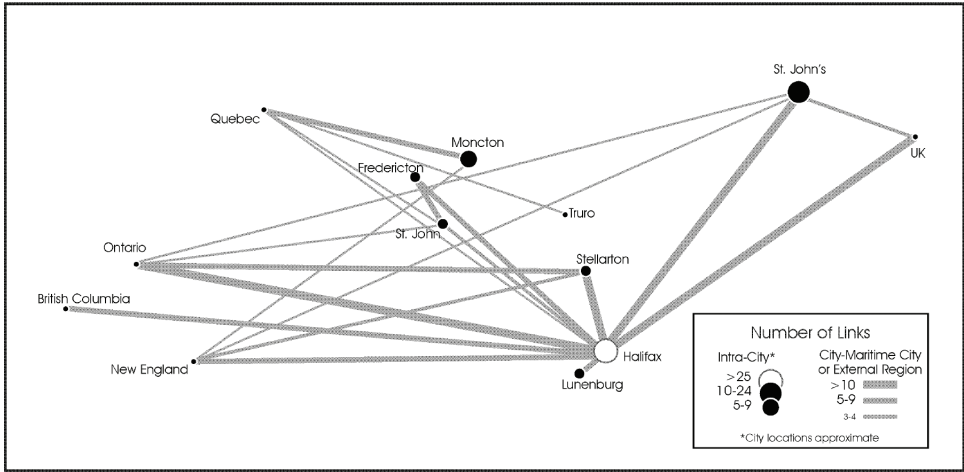


Figure 1. Maritime companies links with university city or university region

University	University State and Region	Number of Total Directors	Percent of Total
Harvard University	MA, New England	16	4.0
Yale University	CT, New England	3	0.8
Columbia University	NY, Mid-Atlantic	2	0.5
New York University	NY, Mid-Atlantic	2	0.5
Clarkson University	NY, Mid-Atlantic	2	0.5
Wheaton College	IL, Great Lakes	2	0.5
University of Maine	ME, New England	2	0.5
Babson College	MA, New England	2	0.5
Dartmouth College	NH, New England	2	0.5
Johns Hopkins University	MD, Mid-Atlantic	2	0.5

Table 4. Top American universities attended by maritimes directors

examine brain circulation, this information was required. This data was obtained from Standard and Poor's *Register of Corporations, Directors, and Executives* (2010), University of Toronto's *Canadian Who's Who* (2010), and individually contacting the corporations. These cases were the result of fourteen individuals, where eleven were born in Canada (nine in Atlantic Canada), one in the United States, one in Germany, and one unknown. Saxenian (2006) would argue that these results are actually transnational communities that provide the shared information, contacts, and trust that allow local firms to compete in an increasingly global economy. While her work is based on the Silicon Valley experience, results presented in this paper show a cross border relationship, and thus brain circulation, between Atlantic Canada and the New England region of the United States. Kuznetsov and Sabel (2006) add that these links bridge institutions between these two regions, and the risk-mitigating knowledge associated with institutions that these individuals possess is invaluable.

By delving into corporate profiles, it is possible to see that on sixteen of these twenty-five occasions, the companies maintained international links (e.g. subsidiaries, parent companies, etc.). Even more pertinent to this study, thirteen were either owned or maintained ownership of American companies with headquarters in the New England region. For example, Derek Oland, born and educated in New Brunswick before attending graduate school at Harvard University, is a director of Emera Incorporated, which is wholly owned by Bangor Hydro-Electric Company headquartered in Bangor, Maine. It also maintains a 50 percent interest in Bear Swamp Power Company llc, headquartered in Millnocket, Maine. Of course these relationships and others like them could (or would) exist without directors with educational backgrounds in the New England region. But it is important to note, that the corporate leaders of the firms possessing a New England background can only positively reinforce the strategy as they are familiar with the institutions of the Northeastern United States.

Companies that retain directors with a New England education and a domestic strategy generally maintain an outward looking business philosophy. For example, Paul D. Sobey (President and Chief Executive Officer of Empire Company, which controls the Sobey family empire) serves on four different boards of directors making him the most connected director in Atlantic Canada. Robert G.C. Sobey also sits on the board of directors for Empire Company Limited out of Stellarton, Nova Scotia. Most known for its ownership of Sobeys, Canada's number two grocery chain, this Canadian company maintains an aggressive inter-regional strategy, with operations throughout a number of provinces across Canada. Robert G. Sobey also sits on the board of Lawton's Drug Stores Limited a subsidiary of Empire. The parent and subsidiary are interconnected significantly as the drug store can be found within Sobey's throughout Atlantic Canada.

Kuznetsov and Sabel (2006) write that expatriates can serve as "bridges" by providing access to and knowledge of external markets, sources of investment, and expertise. Consequently, the personal backgrounds of these individuals are influential in their ability to advance corporations towards an externally oriented strategy. Consequently, brain circulation is similar to the concept of interlocking directorates, when individuals sit on the board of more than one corporation.

Research on interlocking directorates has developed extensively over the last century. As the business environment has changed, so too have different paradigms as chief explanations.

Director Name	Company	Company City	Birth Place	Education 1	Education 2	Education 3
Michael B Decter	Medavie Blue Cross	Moncton, NB	Manitoba	Harvard U.		
Bert Frizzell	The Shaw Group Limited	Halifax, NS	Nova Scotia	Acadia U.	Harvard U.	
David A. Hope	Major Drilling Group International Inc.	Moncton, NB	Nova Scotia	Harvard U.		
John L. Leckie	Rutter Inc.	St. John's, NF	Quebec	Bishop's U.	Harvard U.	
Frederick J. Mifflin	Altius Minerals Corporation	St. John's, NF	Newfoundland	Queen's U.	U. of Chicago	Harvard U.
Derek Oland	Nova Scotia Power Incorporated	Halifax, NS	New Brunswick	U. of New Brunswick	U. of New Brunswick	Harvard U.
Derek Oland	Emera Incorporated	Halifax, NS	New Brunswick	U. of New Brunswick	U. of New Brunswick	Harvard U.
Derek Oland	Moosehead Breweries Limited	St. John, NB	New Brunswick	U. of New Brunswick	U. of New Brunswick	Harvard U.
Paul D. Sobey	Empire Company Limited	Stellarton, NS	Nova Scotia	Dalhousie U.	Harvard U.	
Paul D. Sobey	ECL Properties Limited	Stellarton, NS	Nova Scotia	Dalhousie U.	Harvard U.	
Paul D. Sobey	Crombie Real Estate Investment Trust	Stellarton, NS	Nova Scotia	Dalhousie U.	Harvard U.	
Robert G. C. Sobey	Lawton's Drug Stores Limited	Dartmouth, NS	Nova Scotia	Queen's U.	Babson Coll.	
Robert G. C. Sobey	Empire Company Limited	Stellarton, NS	Nova Scotia	Queen's U.	Babson Coll.	
Allan C. Shaw	The Shaw Group Holding Limited	Halifax, NS	Nova Scotia	Dalhousie U.	Dalhousie U.	Harvard U.
Allan C. Shaw	The Shaw Group Limited	Halifax, NS	Nova Scotia	Dalhousie U.	Dalhousie U.	Harvard U.

Table 5. Atlantic Canadian company directors with New England education

O'Hagan: Atlantic Canadian Corporate Directors and Their Educational Affiliations

Director Name	Company	Company City	Birth Place	Education1	Education2	Education3
F. Thomas Stanfield	The Great Eastern Corporation Limited	Halifax, NS	Nova Scotia	Dalhousie U.	Dartmouth Coll.	
F. Thomas Stanfield	Stanfield's Limited	Truro, NS	Nova Scotia	Dalhousie U.	Dartmouth Coll.	
Barbara Trenholm	University of New Brunswick	Fredericton, NB	Nova Scotia	Mount Allison U.	U. of Maine	
Barbara Trenholm	Plazacorp Retail Properties Ltd.	Fredericton, NB	Nova Scotia	Mount Allison U.	U. of Maine	
Stephen A. Jarislowsky	Goodfellow Inc.	Dartmouth, NS	Germany	Cornell U.	U. of Chicago	Harvard U.
Elizabeth Parr-Johnston	Nova Scotia Power Incorporated	Halifax, NS	New York, USA	Wellesley Coll.	Yale U.	Yale U.
Elizabeth Parr-Johnston	Parr Johnston Economic and Policy Consultants	Chester Basin, NS	New York, USA	Wellesley Coll.	Yale U.	Yale U.
Elizabeth Parr-Johnston	Emera Incorporated	Halifax, NS	New York, USA	Wellesley Coll.	Yale U.	Yale U.
Philip L. Webster	Advanced Primary Minerals Corporation	Dartmouth, NS		Princeton U.	Harvard U.	
Philip L. Webster	Erdene Resources Development Corporation	Dartmouth, NS	Princeton U.	Harvard U.		

Table 5. Atlantic Canadian company directors with New England education

Research on interlocking directorates has been dominated by sociologists with contemporary investigations examining the subject from a resource dependency perspective (Pfeffer and Salancik 1978). In this sense, connections yield knowledge transfer between the firms (Au, Peng, and Wang 2000; Shaw, Curth, and Alexander 2006) allowing companies to make better business decisions.

The small amount of geographical research relating to corporate directors has been carried out by only four geographers (Green, 1981; Green and Semple, 1983; Rice and Semple, 1993; O'Hagan and Green, 2004) and explores this principally from two perspectives. First, interlocking directorates as an inter-firm influence network, where companies influence the activities of others through strategic interlocking linkages. Second, and more related to this study, as an inter-firm knowledge network, where business know-how is shared by firms through interlocking board memberships. This added knowledge can be valuable in the context of institutionalism. As suggested earlier, external links provide companies with outside information. This is important as it prevents companies from relying on insular information and an inter-regional corporate strategy. Green (1981) and Green and Semple (1983) pioneered the geographic study of interlocking directorates and information transfer with a regional analysis of directors in the United States manufacturing belt. More recently, O'Hagan and Green (2002a, 2002b, 2004) extended the spatial analysis of information and interlocking directorates further through an examination of the evolving North American director network as a whole.

The fact that there are twenty five total links from alumni of New England universities and only fourteen individuals, suggests that interlocking directorates persist amongst this group. Of the fourteen people, eleven were involved in an interlock (79 percent) between two companies from the Maritimes. Since some individuals were involved in more than one interlock, there was a total of sixteen interlocks (an overall average of 1.14 interlocks per director). For comparison purposes, there were 732 total directors that sat on the boards of Maritime companies regardless of their education, with 109 involved in at least one interlock (less than 15 percent of the total). Since some individuals were involved in more than one interlock, there was a total of 142 total interlocks (an average of 0.19 interlocks per director).

When considering all Canadian firms in the *Financial Post Directory of Directors* (not just Atlantic Canadian companies) the results become even more interesting. The fourteen directors who attended a New England University were involved in a total of fifty-four interlocks (an overall average of 3.86 interlocks per director). For comparison purposes, of all the 732 total directors that sat on the boards of Maritime companies, a total of 157 total interlocks existed (an average of 0.21 interlocks per director). Within the context of institutionalism, New England educated directors are more connected externally when compared to the entire sample of directors leading Maritime companies. Returning to the concept of brain circulation, when individuals attend a New England university compared to an Atlantic Canadian university they are exposed to external institutions and greater international connections. We argue that the brain circulation does bring new knowledge, but also new connections via interlocks which further the knowledge base of these individuals.

Conclusion

The purpose of this paper was to examine the spatial relationship between the boards of directors of companies in Atlantic Canada and the universities attended by these individuals. Specific attention was given to evaluating the cross-border relationship between the Atlantic Canadian provinces and New England universities of the United States. As expected intra-regional and intra-city links were dominant. In order to investigate brain circulation though, specific consideration was given to inter-regional links, especially those to the New England region of the United States. Given the strong economic links, the geographical proximity, and the presence of prominent business programs of universities in the New England region, it was not surprising that companies headquartered in Atlantic Canada maintained a noteworthy relationship with New England educated directors. Results showed that five of the top ten American universities attended by Atlantic Canadian company directors were from the New England region. A further three were from New York, another geographically proximate state.

The spatial relationship is particularly relevant within economic geography's current discussion on brain circulation and institutionalism. Individuals that leave Atlantic Canada to pursue a university education internationally are exposed to different viewpoints and business paradigms than are available locally. Just as important, the international experience and social contacts that directors make when studying abroad can be a valuable sources of knowledge accumulation for the home region. To properly investigate brain circulation, birth data was also obtained for these New England educated directors. Of the fourteen individuals, eleven were born in Canada (nine in Atlantic Canada), one from the United States, one from Germany, and one unknown.

Results confirmed this hypothesis through the increased economic activity of companies led by New England educated directors. Of particular note, Atlantic Canadian companies with New England university alumni were well connected to the American region. Of the twenty-five occasions where Atlantic companies maintained directors that attended a New England university, thirteen were either owned or maintained ownership of American companies with headquarters in the New England region. Even companies that maintained directors with a New England education and a domestic strategy generally maintained an unusually high outward looking philosophy.

Results concerning interlocks are just as intriguing. New England educated directors experienced a much higher propensity to interlock, both inter- and intra-regionally. Perhaps this externally motivated philosophy is a result of the knowledge gained and the contacts made from an international education. Within the context of institutionalism, New England educated directors are more connected externally when compared to the entire sample of directors leading Maritime companies. This has exposed them to differing corporate institutions, strategy, and culture than is available in the home region.

Over the last two decades, academics (Saxenian 1994; Schoenberger 1997) have attempted to position research on corporate culture within the concept of place. Results of this study have added to this vein of research, but they also spur further research questions that need to be addressed. Who are the people leaving the Maritime region to pursue an education in another region? What are the characteristics of these future leaders in comparison to those directors that

remain behind to pursue an education in Atlantic Canada? For example, results discussed earlier suggest two of the fourteen directors that attended a university in New England were Paul D. Sobey and Robert G.C. Sobey. This raises the question, are individuals of prominent business families in Atlantic Canada more likely to obtain their educations externally? If they do pursue an education outside of Atlantic Canada, what are the long term ramifications for economic activity in the region? These queries are examples of areas in which further investigation that can contribute to the geographic theory of corporate leadership and culture. Geographers can investigate these questions as well as the impact of corporate culture and leadership on regional and national development from a unique perspective; a perspective that examines the role of space, place and the spatial linkages between economic regions.

SEAN O'HAGAN is an Associate Professor in the Department of Geography at Nipissing University, North Bay, ON Canada. Email: seano@nipissingu.ca. His research interests center on corporate geography.

MILFORD B. GREEN is a Professor in the Department of Geography at The University of Western Ontario, London, ON Canada. Email:mbgreen@uwo.ca. His research interests center on corporate geography.

Notes

1. For a more extensive review of the importance of geography in a knowledge economy see Markuson (1996) Morgan (2004) and Bathelt, Malmberg, and Maskel (2004).

References

- Amin, A. 2004. An institutionalist perspective on regional economic development. In *Reading economic geography*, eds. T.J. Barnes, J. Peck, E. Sheppard, A. Tickell, 48-58. Victoria, Australia: Blackwell Publishing.
- Au, K., M. Peng, and D. Wang. 2000. Interlocking directorates, firm strategies, and performance in Hong Kong: Towards a research agenda. *Asia Pacific Journal of Management* 17: 29-47.
- Bathelt, H., A. Malmberg, and P. Maskell. 2004. Clusters and knowledge: local buzz, global pipelines and the process of knowledge creation. *Progress in Human Geography* 28: 31-56.
- Brender, N. and M. Lefebvre. 2006. Canada's hub cities: A driving force of the national economy, July 2006 The Conference Board of Canada. Ottawa, Canada.
- Canadian Who's Who. 2009. http://www.fpinfomart.ca.proxy1.lib.uwo.ca:2048/fpdd/dd_form.php (last accessed 1 December 2009).
- Financial Post. 2009. *Directory of Directors*. http://www.fpinfomart.ca.proxy1.lib.uwo.ca:2048/fpdd/dd_form.php (last accessed 1 December 2009).
- Gertler, M. 1997. The invention of regional culture. In *Geographies of economies*, R. Lee and J. Willis, eds., London: Edward Arnold, 47-58.
- Green, M.B. 1981. Regional preferences for interlocking directorates among the largest American corporations. *Environment and Planning A* 13(7): 829-839.
- Green, M.B. and R. Semple. 1981. The corporate interlocking directorate as an urban spatial

- information network. *Urban Geography* 2: 148-160.
- Granovetter, M. 1985. Economic action and social structure: The problem of embeddedness. *American Journal of Sociology* 91: 481-510.
- Hodgson, G.M. 2006. What are institutions? *Journal of Economic Issues* 40: 2-4.
- Industry Canada. 2008. Trade Data Online, Trade byproduct (hs Codes), http://strategis.gc.ca/sc_mrkti/tdst/tdo/tdo.php#tag. Ottawa, Canada. (last accessed 11 February 2009).
- Kuznetsov, Y. and C. Sabel. 2006. International migration of talent, diaspora networks, and development: Overview of main issues. In *Diaspora networks and the international migration of skills: How countries can draw on their talent abroad*, ed. Y. Kuznetsov, 3-20. Washington, dc: World Bank.
- Markusen, A. 1996. Sticky places in slippery space: A typology of industrial districts. *Economic Geography* 72: 293-313.
- Maskell, P. and A. Malmberg. 1999. Localized learning and industrial competitiveness. *Cambridge Journal of Economics* 23: 167-185.
- Morgan, K. 2004. The exaggerated death of geography: Learning, proximity and territorial innovation systems. *Journal of Economic Geography* 4: 3-21.
- O'Hagan, S., M.D. Rice, and M.B. Green. 2008. North American corporate directors and educational affiliations: A geographical analysis. *Geography Research Forum* 28: 59-81.
- O'Hagan, S. and M.B. Green. 2002a. Interlocking directorates: an example of tacit knowledge transfer. *Urban Geography* 23: 154-179.
- O'Hagan, S. and M.B. Green. 2002b. Tacit knowledge transfer via interlocking directorates: a comparison of Canada and the United States. *Geografiska Annaler* 84B: 49-63.
- O'Hagan, S. and M.B. Green. 2004. Corporate knowledge transfer via interlocking directorates: A network analysis approach. *Geoforum* 35: 127-139.
- Peck, J. 2005. Economic sociologies in space. *Economic Geography* 81: 127-176.
- Pfeffer, J. and G.R. Salancik. 1978. *The external control of organizations: A resource dependence perspective*. New York: Harper and Row.
- Rice, M.D. and R. Semple. 1993. Spatial interlocking directorates in the Canadian urban system, 1971-1989. *Urban Geography* 14: 375-396.
- Saxenian, A. 1994. *Regional advantage: Culture and competition in Silicon Valley and Route 128*. Cambridge, ma: Harvard University Press.
- Saxenian, A. 2002. Transnational communities and the evolution of global production networks: the cases of Taiwan, China and India. *Industry and Innovation* 9: 183-202.
- Saxenian, A. 2006. *The new Argonauts: Regional advantage in a global economy*, Cambridge, ma: Harvard University Press.
- Schein, E. 1992. *Organizational culture and leadership*. San Francisco, ca: Jossey-Bass.
- Schoenberger, E. 1997. *The cultural crisis of the firm*. Malden, ma: Blackwell.
- Shaw, G., L. Curth, and A. Alexander. 2006. Selling self-service and the supermarket: The Americanization of food retailing in Britain, 1945-60. *Business History* 46: 568-582.
- Standard and Poor's. 2010. *Standard and Poor's register of corporations, directors, and executives*, 2010. New York: Standard and Poor's.
- Statistics Canada. 2008. Gross investment product, expenditure based, by province and ter-

ritory. <http://www40.statcan.gc.ca/l01/cst01/econ15-eng.htm>, Ottawa, Canada (last accessed 11 February 2009).

Statistics Canada. 2009. Population estimates and projections. <http://www40.statcan.gc.ca/l01/cst01/demo02a-eng.htm?sdi=population>. Ottawa, Canada (last accessed 11 February 2009).

Storper, M. 1997. *The regional world: territorial development in a global economy*. New York: Guilford Press.