

Power, Political Economy, and Supply Chains: Staples as Media of Power

James Lawson, PhD (U. Victoria/Memorial U.)
Department of Political Science
University of Victoria
Victoria, BC V8W 3P5
(o) 250-721-7496
lawsonj@uvic.ca

Draft: Please do not cite without permission. Comments or criticisms welcome.

Paper presented at the 2005 Annual Meetings
of the Canadian Political Science Association
June 2-5, 2005.

Abstract:

Recent international developments in raw material export industries have refocused attention on the resource supply chain as a specific terrain of political-economic power and contention. Some of the most intriguing of these developments are the global debate around the power and the subversive potential of 'branding', a related debate about fair-trade and environmental certification programmes, and, more specifically, China's recent interest in direct investment in the Canadian resource sector. These particular developments point to a substantially different context for the ongoing exploitation of Canadian 'staples'. These particular developments all concern the potential consequences that would flow from effective régulation or steering of productive/extractive activity from different points in the supply chain. Whether it is to address the political implications of a major staples-based engagement with a metropolitan power that is explicitly non-Western and non-liberal, or to address the potential of informed consumerism to combat the fetishistic commodity form and to re-link consumption and production questions, political economy must be able to assess the régulation or steering potential of staple institutions. Informed but not confined by earlier Canadian debates, this paper reshapes the concept of the staple as an unstable, complex, segmented, trans-border complex of economic institutions (including markets) that govern a specific kind of supply chain. Uniquely central to the narrow economic sustainability of such supply chains is the regulatory role of ground rent over a flow of matter that derives from a specific environmental context, and that occupies a 'holey space' (Lawson 2001; Deleuze and Guattari 1987).

Introduction: Power Riding a Supply Chain

This paper begins with historical metaphor. In 1860, C. Williams¹ depicted Edward, Prince of Wales, and a cluster of well-dressed Ottawa notables descending that new-borne capital's famous timber slides, during the prince's royal tour to the US and the Province of Canada.² (See Plate 1). The vehicle was a logging crib, then the usual mode for transporting semi-processed square timber, complete with ornamental conifers and topped with a royal ensign. In Edward's little lark of long ago is a living embodiment of sovereignty (or of sovereignty-to-be) riding a supply chain, or to rephrase, a staple serving as a medium of power.

This paper addresses the power mediated by staples as a reality that if anything has gained in political significance, and inquires into its institutional conditions. Of course, a much wider theoretical debate inquires into the sites for specifically political action can take place, and thus, the limits of the political;³ considering spaces beyond the 'enclosures' of state sovereigns is particularly fruitful in this regard,⁴ and for various reasons, *economic* institutions have been investigated with particular intensity.⁵ The focus here is more specific: those economic spaces generated by boundary-crossing raw material commodity chains or *filières*.⁶

The renovated theoretical framework offered here is informed by previous work on 'staples' in Canadian political economy, but it is not confined by that work. The formulation also engages constructively with other analytical traditions: the commodity-

¹ C. Williams, "Prince of Wales in Canada Descending a Timber Slide at Ottawa, 1860," (Ottawa: Bytown Museum, 1860).; cf. Ian Radforth, *Royal Spectacle: The 1860 Visit of the Prince of Wales to Canada and the United States* (Toronto: University of Toronto Press, 2004), 294-5.

² The larger visit of Edward, Prince of Wales, to the United States and the then-Province of Canada has recently been made the subject of a sustained historical study Radforth, *Royal Spectacle*., but is not of particular concern to the present paper.

³ For some time, some radical democratic thought has defined political action in terms of creative structuring activity across the range of state, economy, and civil society René B. Bertramsen, Jens Peter Frolund Thomsen, and Jacob Torfing, *State, Economy and Society* (London: Unwin-Hyman, 1991).. More conventional liberal and institutional treatments continue to associate political power with the state alone.

⁴ Compare Warren Magnusson, *The Search for Political Space* (Toronto: University of Toronto Press, 1995)..

⁵ A. Claire Cutler, *Private Power and Global Authority* (Cambridge, UK: Cambridge University Press, 1999), Naomi Klein, *No Logo* (Picador, 1999), Michele Micheletti, "'Put Your Money Where Your Mouth Is!': The Market as an Arena for Politics," in *Market Matters: Exploring Cultural Processes in the Global Marketplace*, ed. Christina Garsten and Monic Lindh de Montoya (London: Palgrave/Macmillan, 2004).

⁶ In this, the author has been particularly strongly affected by a cluster of recent work on private governance and particularly certification programmes: Cutler, *Private Power*, Errol Meidinger, "Environmental Law for Global Civil Society: The Forest Certification Prototype (Draft 1.3)," in *Paper presented for the Conference on Social and Political Dimensions of Forest Certification, University of Freiburg, Germany, June 20-22, 2001* (2001), Erika N. Sasser, "Gaining Leverage: Ngo Influence on Certification Institutions in the Forest Products Sector," in *Forest Policy for Private Forestry: Global and Regional Challenges*, ed. L. Teeter, B. Cashore, and D. Zhang (Wallingford, UK: CABI Publishing, 2003).., and most directly, Benjamin Cashore, Graeme Auld, and Deanna Newsom, *Governing through Markets: Forest Certification and the Emergence of Non-State Authority* (New Haven: Yale University Press, 2004).. The author wishes to express his particular gratitude to the Cashore team.

chains of Hopkins and Wallerstein and more recently Gereffi and colleagues; and French political economy's engagement with colonial and post-colonial *filières* or commodity flows.⁷ The present effort particularly shares with the *filière* approach and with Harold Innis, the ambition to remain connected with concrete historical processes and mid-range theorization.

The paper stands more generally at a meeting point between critical political economy and institutional economics. Like the *régulation* approach of the mid-1990s,⁸ it points particularly at the institutional shaping of productive and exchange activity.⁹ But like the staples and the *filière* approaches, the paper addresses these 'institutional forms' at the level of particular resource commodities, rather than at the level of the nation or sub-national jurisdictions,¹⁰ and it emphasizes natural resource exports specifically.¹¹

Concepts are developed in order to solve certain problems in particular historical settings, and the evolution of human societies mandates progressive rethinking.¹² Resource depletion, new paths of urban development in former entrepôts, the new, more qualified place of state sovereignty in global governance, and sectoral restructuring have all changed what is most significant about staples. But 'staples' remain important, both to peripheral areas and to urban ones, to both the developed world and the underdeveloped. The present goals are first, to sketch some key interventions in the debate over raw material exports; second, to sketch some reasons for reframing the staple in terms of policy interventions in and through these spaces; third, to reframe the staple/*filière* in the contemporary context; and fourth, to identify features that should affect the capacity of the staple/*filière* to operate as a medium of power. What emerges is a segmented trans-boundary institutional complex which links nodes of production and exchange transfer points in predominantly linear space.

The Canadian Experience of Analyzing Raw Material Supply Chains: Contesting the Concept of the Staple

The migrant is not in a position immediately to supply all his needs and to maintain the same standard of living as that to which he has been accustomed, even with the assistance of Indians, an extremely fertile imagination, and benevolent Providence....The migrant was consequently in search of goods which

⁷ Philip Raikes, Michael Friis Jensen, and Stefano Ponte, "Global Commodity Chain Analysis and the French *Filière* Approach: Comparison and Critique," *Economy and Society* 29, no. 3 (2000), J. Wilkinson, "A New Paradigm for Economic Analysis?," *Economy and Society* 26, no. 3 (1997).

⁸ Gérard Boismenu and Daniel Drache, *Politique Et Régulation: Modèle De Développement Et Trajectoire Canadienne* (Montréal: Editions L'Harmattan-Éditions du Méridien, 1990). Robert Boyer, "State and Market: A New Engagement for the Twenty-First Century?," in *States against Markets: The Limits of Globalization*, ed. Robert Boyer and Daniel Drache (London: Routledge, 1996).

⁹ Wilkinson, "New Paradigm?," 306, 08-11.;

¹⁰ cf. Boismenu and Drache, *Politique Et Régulation: Modèle De Développement Et Trajectoire Canadienne*, Boyer, "State and Market: A New Engagement for the Twenty-First Century?," 108-11.

¹¹ Contrast Gary Gereffi, "Global Sourcing in the Us Apparel Industry," *Journal of Textile and Apparel Technology and Management* 2, no. 1 (2001), Gary Gereffi, "Shifting Governance Structures in Global Commodity Chains, with Special Reference to the Internet," *The American Behavioral Scientist* 44, no. 10 (2001), Raikes, Jensen, and Ponte, "Gcc Analysis and the French *Filière* Approach," 410.

¹² Goran Therborn

could be carried over long distances by small and expensive sailboats and which were in such demand in the home country as to yield the largest profit. These goods were essentially those in demand for the manufacture of luxuries, or goods which were not procured, or produced to a slight extent, in the home country as in the case of gold and of furs and fish.¹³

The general tendencies in the industrial areas of western civilization...have had a pronounced effect on Canada's export of staples. In these areas machine industry spread with rapidity...Lumber, wheat, cotton, wool, and meat may be cited as examples of staples.¹⁴

In many ways, this creation narrative from Innis' *Fur Trade in Canada* provides a ground for the discussion to follow. As Robin Neill has noted, the staple was a preoccupation for many early twentieth century researchers in Canada.¹⁵ Daniel Drache reminds us of the term has roots in the socially imbedded monopoly trading institutions of Europe's medieval towns.¹⁶ But it is Innis' relentless torrent of phrases and sentences, the diffuse but electric crackling of intellectual energy amongst his epigraphic appositions, that has perhaps attracted the greatest attention over time.¹⁷

Innis' treatment did involve some broad distinctions. There were luxury commercial staples and later, industrial ones. Some, like fur and wheat, were institutionally centralizing; others like cod tended to diffuse their operations and produced multiple power centres.¹⁸ But always apparent was Innis' critical view of the cyclonic instability, 'cumulative' monopolistic staple dominance, and unintended consequences of staple features such as unused transportation capacity; as well as of the smoothly oiled equilibration of the market depicted in marginal economic theory:

If government support or government ownership is essential to the economic development of new countries because of the unpredictability of the results and the immensity of the immediate demands for capital the effects of capital investment differ materially from the gradual involvement of labour and capital for which economic theory is accustomed to allow in a discussion of the dynamic state. Violent swings are set in motion according to the prediction of unpredictableness. In the main these swings are the result of the intensified

¹³ Harold A. Innis, *Staples, Markets, and Cultural Change: Selected Essays*, trans. Daniel Drache (Kingston-Montréal: McGill-Queen's, 1995), 4.

¹⁴ *Ibid.*, 5-6.

¹⁵ Robin Neill, *A History of Canadian Economic Thought* (London: Routledge, 1991), 129-248.

¹⁶ Daniel Drache, "Introduction -- Celebrating Innis: The Man, the Legacy, and Our Future," in *Staples, Markets, and Cultural Change: Selected Essays, Harold A. Innis*, ed. Daniel Drache (Montreal-Kingston: McGill-Queen's University Press, 1996), xxxix.

¹⁷ Abraham Rotstein, "Innis: The Alchemy of Fur and Wheat," *Journal of Canadian Studies* 12, no. 5 (1977): 6.

¹⁸ Harold A. Innis, *The Cod Fisheries: The History of an International Economy*, rev. ed. (Toronto: University of Toronto Press, 1954), qtd. in Ian Parker, "Harold Innis, Karl Marx and Canadian Political Economy," in *Class, State, Ideology and Change*, ed. Paul Grayson (Toronto: 1980), 26.

application of the machine industry at a mature stage of technique to vast virgin natural resources.¹⁹

By the 1950s, the staples approach to economics was giving way to neo-classical dominance.²⁰ Then in the 1960s and 1970s, Innis was re-appropriated as a kind of analyst of imperialism for the former 'white settler' colonies.²¹ The major policy preoccupations of left-nationalist intellectuals were Canada's relatively weak industrial base; high, persistent staples dependence; and high, accelerating foreign direct investment. Innisian themes offered some explanations: 1) for complex reasons, staples orientation was self-perpetuating or 'cumulative', leading to dominance or 'monopoly' of economic institutions and to the active political dominance of a 'staples fraction';²² 2) that high up-front infrastructural investment for staples development made for heavy public debt servicing and weak Keynesian (or other) steering by central state agencies;²³ 3) that transnational commodity markets have left staples subject to 'cyclonic' volatility and an emphasis on cost competition.²⁴ In short, staples operated as perverse lead industries of Canadian industry-regions,²⁵ with self-reinforcing inflows of capital and outflows of surplus dampening rather than catalyzing regional development.

Innis came under intensive critical scrutiny within the Canadian New Left in the late 1970s and early 1980s. Innis' treatment of the state and politics was supposedly geographically and technologically reductionist, ignoring (for some) the 'relative autonomy' of the political; and unfair trade relations were privileged over production relations in explaining exploitative or delayed industrialization.²⁶ (The latter debate

¹⁹ Innis, qtd. in Neill, *History*, 132.

²⁰ Daniel Drache, "Rediscovering Canadian Political Economy," in *A Practical Guide to Canadian Political Economy, 2nd Ed.*, ed. Wallace Clement and Daniel Drache (Toronto: James Lorimer, 1982), Neill, *History*, Mel Watkins, "Canadian Capitalism in Transition," in *Understanding Canada: Building on the New Canadian Political Economy*, ed. Wallace Clement (Kingston-Montreal: McGill-Queen's University Press, 1997).

²¹ Drache, "Rediscovering Canadian Political Economy.", M.H. Watkins, "A Staple Theory of Economic Growth," in *Approaches to Canadian Economic History*, ed. W.T. Easterbrook and M.H. Watkins (Toronto: McClelland and Stewart Limited, [1963] 1967), Mel Watkins, "The Staple Theory Revisited," *Journal of Canadian Studies* 12, no. 5 (Winter 1977)..

²² Melissa Clark-Jones, *A Staple State: Canadian Industrial Resources in Cold War* (Toronto: University of Toronto Press, 1987), Wallace Clement, *Continental Corporate Power: Economic Linkages between Canada and the United States* (Toronto: McClelland and Stewart, 1977), R.T. Naylor, "The Rise and Fall of the Third Commercial Empire of the St. Lawrence," in *Capitalism and the National Question in Canada*, ed. Gary Teeple (Toronto: University of Toronto Press, 1972).

²³ Drache, "Introduction -- Celebrating Innis: The Man, the Legacy, and Our Future," xxiv-xxvii.

²⁴ Ibid, Glen Norcliffe, "Regional Labour Market Adjustments in a Period of Structural Transformation: An Assessment of the Canadian Case," *The Canadian Geographer* 38, no. 1 (1993): 10-11. Robin Neill, *A New Theory of Value: The Canadian Economics of H.A. Innis* (Toronto: University of Toronto Press, 1972).

²⁵ M. Storper and R. Walker, *The Capitalist Imperative: Territory, Technology and Industrial Growth* (Oxford: Basil Blackwell, 1989).

²⁶ For the left critique of this position, see David McNally, "Staple Theory as Commodity Fetishism: Marx, Innis and Canadian Political Economy," *Studies in Political Economy* 6 (1981)., and more generally the 1981 special edition of *Studies in Political Economy*.

closely paralleled the theoretical issues in the wider left critique of the international dependency approach.²⁷⁾

An important cluster of economic geographers, including Trevor Barnes and Roger Hayter, continued to look to Innis for insight.²⁸ In BC and Atlantic Canada, key staples were still dominant, still discernibly provoking development concerns.²⁹ Some researchers emphasized classic Innisian themes in studying BC, noting 1) the continued entrepôt role of Vancouver; 2) the high-volume, low-value-added character of the BC forest staple; 3) the volatility and dependency of an otherwise prosperous provincial economy; 4) the centrality of forest rents in provincial economic policy.³⁰ During 1990s, a new 'post-staples' position emerged in partial opposition to this view. Thomas Hutton, H. Craig Davis, and others identified new patterns in resource economics and politics (such as environmentalist advocacy and resource exhaustion) that flowed logically from the profile of a staples trap. But in other respects, staples dominance seemed to have broken down. New employment patterns in Vancouver and Victoria were service- rather than staples-dominated; the BC economy was as service-dominated as the rest of the country.³¹ The roots of the new service dominance undoubtedly has multiple causes: staples are simultaneously shrinking in relative importance, increasing capital intensity in core work processes, and outsourcing service work as much as harvesting and trucking.

²⁷ Robert Brenner, "The Origins of Capitalist Development: A Critique of Neo-Smithian Marxism," *New Left Review* 104 (July-August 1977). Ellen Meiksins Wood, "Capitalism, Merchants and Bourgeois Revolution: Reflections on the Brenner Debate and Its Sequel," *International Review of Social History* 41 (1996).. For the subsequent empirical turn in international research into the counter-intuitive link between resource abundance and sub-optimal development, see Michael L. Ross, "The Political Economy of the Resource Curse," *World Politics* 51, no. 2 (1999).

²⁸ Trevor Barnes and others, "Focus: A Geographical Appreciation of Harold A. Innis," *The Canadian Geographer* 37, no. 4 (1993). Robert Hayter and Trevor Barnes, "Innis' Staple Theory, Exports, and Recession: B.C. 1981-86," *Economic Geography* 66, no. 2 (1990).

²⁹ Hayter and Barnes, "Innis' Staple Theory, Exports, and Recession: B.C. 1981-86." Norcliffe, "Regional Labour Market Adjustments." Bickerton

³⁰ Lawrence Copithorne, "Natural Resources and Regional Disparities: A Skeptical View," *Canadian Public Policy* 5, no. 2 (Spring 1979). Trevor Barnes and Roger Hayter, "British Columbia's Private Sector in Recession, 1981-86: Employment Flexibility without Trade Diversification?," *BC Studies* 98 (1993). Hayter and Barnes, "Innis' Staple Theory, Exports, and Recession: B.C. 1981-86.", Roger Hayter, *Flexible Crossroads: The Restructuring of British Columbia's Forest Economy* (Vancouver: University of British Columbia, 2000).

³¹ Thomas A. Hutton, "The Innisian Core-Periphery Revisited: Vancouver's Changing Relationship with British Columbia's Staple Economy," *BC Studies* 113 (1997). H. Craig Davis, "Is the Metropolitan Vancouver Economy Uncoupling from the Rest of the Province?," *BC Studies* 98 (1993), H. Craig Davis and Thomas Hutton, "The Two Economies of British Columbia," *BC Studies* 82 (1989), H. Craig Davis and Thomas A. Hutton, "Structural Change in the British Columbia Economy: Regional Diversification and Metropolitan Transition," (Vancouver: British Columbia Round Table on the Environment and the Economy, 1992). Michael Howlett, "De-Mythologizing Provincial Political Economies: The Development of the Service Sectors in the Provinces, 1911-1991," in *Provinces: Canadian Provincial Politics*, ed. Christopher Dunn (Peterborough, ON: Broadview Press, 1996).

The Contemporary Agenda: 'Can you hear me now?'³²

Despite rounds of re-appropriation and criticism, recent policy trends provide reasons to renovate the staples approach and apply it to new questions. First, staples retain strategically important roles in countries like Canada, but their role has clearly altered.³³ Second, jurisdictions in key consumer markets have placed staples extractive and cultivation processes high on the policy agenda: safe or organic food production, more sustainable resource extraction and/or cultivation, equity concerns for primary producers and dispossessed indigenous populations.³⁴ New preventive strategies to workplace health and safety have also targeted high-risk extractive and cultivation occupations.³⁵

Third, new demand centres like China are developing interests in Canadian resources, and their potential impacts through the institutions of Canadian resource industries have entered public debate.³⁶ As a new metropolitan rival to American demand and foreign direct investment in Canada, China may address Harold Innis' suspicion of cumulative staple monopolies. But for the first time, Canada' new prospective demand centre is neither Western nor liberal democratic, and its institutionalized handling of staple imports is unique. Does this constitute a problem, whether for satisfactory business relations, or for key Canadian political values?³⁷ Will new staple linkages absorb the institutional differences (similar to 'corporate culture' conflicts during mergers)?

In this context, understanding staples as a medium of power is both directly important and more generally significant. First, extractive activity constitutes a peculiar challenge to both public and private governance. Staples activities occur primarily at remote sites that are often highly dispersed, where meaningful surveillance and accountability are difficult. The infrastructural limitations that state and capitalist seek alike to overcome in order to facilitate staple exploitation are also infrastructural limitations on conventional 'command and control' governance. Consumer boycotts, product labelling, and chain-of-custody certification schemes are all explicable as attempts to fill the perceived governance vacuum created by the neo-liberal pressures to limit and restrain state capacities. While trans-boundary raw material supply chains have typically been

³² This question was a major advertising campaign for Verizon Wireless. Teresa Howard, '*Can You Hear Me Now?*' a Hit (February 22 2004 [cited May 15 2005]); available from http://www.usatoday.com/money/advertising/adtrack/2004-02-22-track-verizon_x.htm.

³³ Lars Mjoset, "Nordic Economic Policies in the 1970s and 1980s," *International Organisation* 41, no. 3 (1987). Norecliffe, "Regional Labour Market Adjustments."

³⁴ Cashore, Auld, and Newsom, *Governing through Markets*.

³⁵ Pablo Navarro et al., "Statistical Report on Forestry and Forestry-Related Whscc Claims, 1990-2002," (St. John's, NL: Coasts under Stress, Memorial University of Newfoundland, 2004 (forthcoming)).

³⁶ John Child and David K. Tse, "China's Transition and Its Implications for International Business," *Journal of International Business* 32, no. 1 (2001), Todd M. Johnson, "Foreign Involvement in China's Energy Sector," in *China Joins the World: Progress and Prospects*, ed. Elizabeth Economy and Michel Oksenberg (New York: Council on Foreign Relations Press, 1999), Alain Sepulchre, "Energy and Globalisation: Oil and Gas in China," *China Perspectives* 54 (2004), Geoffrey York, "An Era Ends as China Becomes an Aid Donor," *Globe and Mail* 2005.

³⁷ Kenneth Lieberthal and Michel Oksenberg, *Policy Making in China: Leaders, Structures, and Processes* (Princeton, NJ: Princeton University Press, 1987), A.R.M. Lower, *Canada and the Far East -- 1940* (New York: Institute of Pacific Relations, 1940), Sepulchre, "Oil and Gas in China."

portrayed primarily as problematic *objects* of policy in the staples debate, they are increasingly discussed as *modes of governance* in their own right. .

Finally, on a broader plane, markets and market-emulating initiatives have played a burgeoning role in over a decade of public administration reform proposals.³⁸ But the discussion often happens in a relatively abstract fashion: THE market as a competitive forum for the exchange of equals between legal equals, THE state operating reliably as a Weberian ‘command-and-control’ mechanism, serving primarily to impede smooth market equilibration. A renovated staples framework is an opportunity to study how a particularly significant market structure in the Canadian economy could actually transmit and bias the exercise of power across boundaries.

The staple as medium and as institutional complex

In Keck and Sikkink’s concept of the ‘boomerang effect’, social scientists were able to capture the circumvention of closed local policy networks through appeals to international actors, who themselves are capable of influencing the local network. Erika Sasser³⁹ has adapted this concept, and has contributed significantly to the discussion of environmental and ‘fair-trade’ certification programmes, in large part by drawing creatively on the debate about ‘global commodity chains’ initiated by Gary Gereffi and others.⁴⁰

Sasser demonstrates a ‘ricochet effect’ inspiring the operation of certification programmes: that is, the potential to circumvent such closed policy networks and to drive change at the point of resource extraction, by 1) essentially political interventions further along the supply chain beyond the reach of the policy network, and 2) the ricochet of those effects back along the commodity chain (in the case of environmental certification schemes, back to the point of extraction). In a nuanced discussion that cannot be fully captured here, Sasser offers a number of strategic considerations for those who would drive change by these means, providing indicators that identify points in the supply chain where such pressure should be most successful. The analysis is broadly economic: it treats the commodity chain as a linear sequencing of markets. Three core variables she identifies for the purposes of targeting pressure are 1) patterns of firm integration along the supply chain (in ordinary parlance, ‘vertical’ integration of firms – see discussion below), 2) market concentration at any given point in the chain (at the limit, competitive versus monopoly markets), and 3) whether responsibility for controversial activity at a given point in the chain is attributed by targeted interveners elsewhere on the chain to individual firms or to whole industries.

This paper’s problems respecting raw material commodity chains are precisely these contemporary problems of ‘power transmission’: what makes for a ‘super-conductor’? what makes for a ‘bad line’? The question is complementary to Sasser’s: what are the conditions under which pressure exerted at one point in a raw material commodity chain

³⁸ D. Osborne and T. Gaebler, *Reinventing Government* (Reading, MA: Addison-Wesley, 1992).

³⁹ Sasser, "Gaining Leverage."

⁴⁰ Gary Gereffi and Miguel Korzeniewicz, eds., *Commodity Chains and Global Capitalism* (Westport, CT: Greenwood Press/Praeger, 1994).

will be effective in achieving intentional effects at a different point in the chain? But it broadens the conception of the supply-chain 'medium'. Staples are more than a series of markets, and markets are more than demand and supply crowds of varying numbers. The paper thus seeks to account for a wider range of variables that may affect 'transmission'.

To begin, media, as they are construed here,⁴¹ are technology-centred complexes with distinctive roles in space-time compression.⁴² Two claims about such compression seem equally valid. David Harvey and other critical geographers have argued that space and time are inherently intertwined aspects of reality, while Innis argued that media are 'biased' in any concrete setting with respect to either space and time. As Doreen Massey's concise critique of Harvey's space-time compression seems to imply, media are 'biased', first in that media compress space and time in distinctive ways, and to distinctive degrees, for different classes, genders, or racialized groups.⁴³ But media are also 'biased' in a more specific Innisian sense: Innis dichotomizes media that easily withstand the test of time, and those that facilitate transfers across space. This is a feature of their particular technological capacities, the geography of their physical deployment in the world, and also their operation in and through a concrete institutional setting.

Media are therefore the numbing 'extensions' of individual human capacities in McLuhan's sense, making us all embodied but 'cyborg' (Haraway) amalgams of body and media.⁴⁴ But as Innis' pioneering studies suggested, media are perhaps most interesting as extensions of humanity in the social sense.⁴⁵ Over-reliance on particular media limits the flexibility and adaptiveness of whole civilizations in mobilizing knowledge, insofar as over-reliance generates monopolies of knowledge.⁴⁶ This carries over Innis' concern about the rigidities and 'monopolies' that arise from a 'staples trap' (Watkins). As the extensions of empire in the Innisian sense, staples are of interest here primarily as space-biased media of power.

But what is power? First, two aspects of power matter here: the first is the varied forces or interventions that are powerful in shaping staples themselves as institutional complexes; the second is the interventions in an already-given staple in order to achieve intended purposes – interventions we might say implement 'policies'. The distinction is of course analytical: the latter, of course, will almost inherently have structuring implications for the staple; some but not all of the former shaping of the staple institutional array will be the consequences of purposive agency, or for that matter be the intended consequences of purposive agency.

⁴¹ Harold A. Innis, *The Bias of Communication*, ed. Paul Heyer and David Crowley (Toronto: University of Toronto Press, 1991), Marshall McLuhan, *Understanding Media: The Extensions of Man* (New York: McGraw-Hill, 1965 (1964)).

⁴² David Harvey, *The Condition of Postmodernity* (London: Oxford University Press, 1989).

⁴³ Doreen Massey is the rigorous thinker that offered this critique.

⁴⁴ Donna Haraway, *Simians, Cyborgs, and Women: The Reinvention of Nature* (London: 1991), McLuhan, *Understanding Media*.

⁴⁵ Antonio Gramsci, *Selections from the Prison Notebooks*, trans. Geoffrey Nowell Smith Quintin Hoare (New York: International Publishers, 1971), 351-57.

⁴⁶ Innis, *The Bias of Communication*.

In considering the staple-shaping aspects of power, power exercised within the ambit of the ordinary economic operation of the staple chain is perhaps particularly important. It is the dimension of power that has been most extensively discussed in the key theoretical approaches discussed here. Power in this sense clearly preoccupied Innis, and was expressed notably in his concerns, described above, about both staple and media bias, and about monopoly in his extended sense. Gereffi and his colleagues, whose global commodity chain (GCC) analysis is discussed below, were initially preoccupied by sites of power concentration at opposing ends of the GCC – that is, with either buyers or producers – though they have since introduced further analytical nuance.⁴⁷ Central to this exercise of power is the capacity of the most powerful corporate centres to outsource low value-added activities, and to include or exclude potential suppliers from the chain entirely through the contracting process. In cases like car manufacture, this capacity centres on the producers (i.e., the car manufacturers like General Motors or Ford), due to the high entry barriers to engaging in that core business. These core activities will be dominated by leading edge technologies that generate Schumpeterian rents. Though Raikes et al. have asked whether the association as outlined is ultimately a circular one, Gereffi et al. argue that high capital intensity and high technology rents close doors – and thus power within the chain – to all but a few. By contrast, in buyer-dominated chains like apparel, production is open to new producers, and so exclusionary power shifts to the companies that control marketing brands.⁴⁸ Based on critique from Raikes et al., the preoccupation in this approach is with entry barriers and rent capture amongst participants in the chain itself, in the process of conducting business related immediately to the chain's operation.

The above is a substantial contribution to an understanding of 'policy instruments' that agents operating within the staple are particularly able to mobilize. However, some basis is also needed for understanding the processes of institutional will formation and implementation, in order to understand the overlapping category of intentional intervention. At least the more abstract concepts from public policy research into state interventions are offered as a platform that can be extended to think about the interventions of a much wider range of institutions. This catholic view of intervening institutions reflects both the literature on global governance and the 'institutional forms' at the centre of the *régulation* approach.⁴⁹ Power to intervene is therefore considered primarily with respect to realizing institutional 'policies' – what given institutions 'choose to do or not to do' (Thomas Dye). As a minimum starting point in analysis,⁵⁰ we

⁴⁷ Gereffi, "Shifting Governance Structures."

⁴⁸ Raïkes, Jensen, and Ponte, "Gcc Analysis and the French *Filière* Approach," 396-7.

⁴⁹ James N. Rosenau, "Governance, Order, and Change in World Politics," in *Governance without Government: Order and Change in World Politics*, ed. James N. Rosenau and Ernst-Otto Czempiel (Cambridge, UK: Cambridge University Press, 1992). Boismenu and Drache, *Politique Et Régulation: Modèle De Développement Et Trajectoire Canadienne*, Robert Boyer, *The Regulation School: A Critical Introduction*, trans. Craig Charney (New York: Columbia University Press, 1990).

⁵⁰ See Lindquist and Wellstead in Michael Howlett, ed., *Canadian Forest Policy: Regimes, Policy Dynamics and Institutional Adaptations* (Toronto: University of Toronto Press, 2001). for an account of how the literatures on policy networks and communities, including Sabatier's advocacy coalition approach; theories of contingency in agenda-setting, such as the garbage can model and subsystem overlap; and the distinctive contributions of scientific expertise, street-level administrators, and communities might all

can therefore think of the ‘power’ for which staples are the medium, in terms of an institution’s autonomy, as well as its effectiveness, in 1) problem definition; 2) goal-setting; 3) the identification of some intervention in some aspect of the staples institutional complex as a potential means that would contribute to the goal; 4) implementation; and 5) evaluative learning.⁵¹

With this basic platform in place, discussion can turn to the nature of the staple, or raw material global commodity chain, beginning with a summary of key differentiating characteristics from other types of market structures. At the core of a staple ‘chain’ are 1) location, extraction, and (for some renewables), cultivation or ‘eco-regulation’ of a given raw material – analytically distinct work processes,⁵² 2) the material’s transformation into ‘currencies’ – intermediate products that different ‘service technologies’ actually use in providing final products and services to consumers,⁵³ 3) the market exchanges and other transfers⁵⁴ that move the raw material institutionally through these processes, and 4) the extended transportation infrastructure that moves the raw materials physically through these processes.⁵⁵

Other characteristic differentiating features about staples are also important: 1) As has been evident from the earliest staples theorists, the use values and other physical characteristics of the raw material itself, including its original location in the natural environment, constitute significant conditioning factors, though not determining ones.⁵⁶ 2) Amidst the various payments that nominally compensate ‘human’ factors of production (notably capital and labour), ground rent necessarily plays a particularly important role. Because of differential rent’s wider role in capital allocation (elaborated by Harvey), a kind of steering function for capitalist investments in land, the particular significance of ground rent in staple organization must be given special consideration in discussing their institutional logic. Marx also associates the low organic composition of capital typical of agriculture and the capacity of that staples sector to charge absolute

broaden the account of the potential contribution of the public policy literature to the study of staples industries.

⁵¹ Michael Howlett and M. Ramesh, *Studying Public Policy: Policy Cycles and Policy Subsystems*, 2nd ed. (Toronto: Oxford University Press, 2003).

⁵² Ted Benton, "Marxism and Natural Limits: An Ecological Critique and Reconstruction," in *The Greening of Marxism*, ed. Ted Benton (New York: Guilford Press, 1996).

⁵³ (<http://www.iesvic.uvic.ca/research/energysystems/energysystemoverview.htm>) Last accessed May 2005.

⁵⁴ An example is the gift relationship Wilkinson, "New Paradigm?," 306..

⁵⁵ Staple chains have been broken down in a variety of ways, with a varying degree of historical and sectoral specificity. Lower’s *Great Britain’s Woodyard* is one example. Erika Sasser (2003) works from a simplified GCC supply chain, understood in terms of the movement from extraction, primary and secondary processing, wholesaling and retailing. Another example in development amongst energy engineers at the University of Victoria moves from the raw material ‘source’ through ‘transformer’ technologies to a ‘currency’ such as refined petroleum or alternating current electricity. A currency can then be applied widely by ‘service technologies’ (cars, blast furnaces, etc.) in the wider economy, which themselves actually provide the ‘services’ (personal transportation, ingot smelting, etc.) demanded in the economy. Thanks to Karena Shaw for drawing attention to this approach. (IESVic website, <http://www.iesvic.uvic.ca/research/energysystems/energysystemoverview.htm>. Last accessed May 2005)

⁵⁶ cf. McNally, "Staple Theory as Commodity Fetishism: Marx, Innis and Canadian Political Economy."

rents, even where differential rents cannot be charged for reasons of relative fertility or location. Finally, wherever these rents can be charged with relatively important self-correcting pressures on capital investment in the land, so too can monopoly rents that have dysfunctional effects.⁵⁷ 3) While some classical staple histories may be criticized for being overly schematic on this point,⁵⁸ staples do differ from other raw material supply chains in being specifically *export-oriented* linkages between peripheries and metropolitan centres. They do thus exhibit a relatively linear form – one might say they are part of a ‘striated’ space (Deleuze/Guattari) – that is physical and not merely conceptual, at least up to the point of intermediate processing into usable ‘currencies’ (IESVic). A raw material supply within a bio-region, as some radical reform positions propose, would therefore stand outside the conceptual meaning of a staple.⁵⁹ The staple is in sum an institutionalized economic structure that differs from others in a number of ways. It is an inherently unstable, segmented, trans-border complex of economic institutions (linked to one another at a minimum by raw material markets) in a relationship of governance with a specific kind of raw material flow from source location to final consumer centres.

A pause is in order to summarize the following discussion with a coordinating image. A number of the following observations can be assembled, at least in a preliminary way, by the metaphorical image of a plant with a central, segmented stem, such as the common horsetail (See Plate II; the original vertical horsetail image has been rendered horizontally). Nodes of activity and points of transfer are distributed along the ‘stem’. The horsetail’s vascular ‘stem’ represents transportation and communication corridors by which first, raw material flows from source to consumer through the various nodes; second, payments flow in the reverse direction, including payments of ground rents; and third, the flows of communication signals (such promotional signals, authoritative public and private orders, and subordinate reporting). To borrow again from the imagery of Deleuze and Guattari⁶⁰, the spatial pattern peculiar to staples is thus more ‘arborescent’ (with a single central ‘stem’) than it is ‘rhizomatic’.

Flow transmissions along these corridors, all of which may operate as media of power, may experience ‘resistance’ to transmission as the result of other aspects of the staple structure. The nodes of activity and transfer points are also where outside interventions are intensely clustered, and (in part as a consequence of their articulation to outside interventions) points of segmentation of the stem. The whorls of thin horsetail leaves in

⁵⁷ David Harvey, *The Limits to Capital* (Chicago: University of Chicago Press, 1982), 330-72.. Ground rent should not be viewed, however, as the sole analytical problem in the analysis of staples Hayter, *Flexible Crossroads*..

⁵⁸ Lorne F. Hammond, "Capital, Labour and Lumber in A.R.M. Lower's Woodyard: James Maclaren and the Changing Forest Economy, 1850-1906" (Ph.D., University of Ottawa, 1993). criticizes Lower's *Great Britain's Woodyard* for an exaggerated picture of British metropolitan dominance, ignoring the co-existence of the British square timber trade and the American market for sawn board deals, and a simple linear image of the industry's operation in space.

⁵⁹ Michael M'Gonigle and Ben Parfitt, *Forestopia: A Practical Guide to the New Forest Economy* (Madeira Park: Harbour Publishing, 1994).

⁶⁰ Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, trans. Brian Massumi (Minneapolis: University of Minnesota Press, 1987).

the horsetail image at these nodes represent these interventions, obviously abstracted visually from the outside institutions that initiate them. The image nonetheless represents the relative autonomy of interventions from every other intervention, both at any particular node and between nodes. If interventions are integrated, either at any particular node or between nodes, a concrete explanation must be provided and cannot be assumed. Integrated institutional interventions operate as partial, overlapping, and sometimes mutually antagonistic reinforcements of the stem itself.

In greater detail, then, Gereffi et al. break down the GCC into ‘nodes’ of distinctive extraction and production/transformation ‘activities’,⁶¹ as well as what one might separately call ‘points’ of transfer and exchange. To take these nodes and points of transfer as irreducible building blocks, and to suggest that the only structuring forces arise from their articulation into the linear arrangement, would be equally misleading. (The following can be said of transportation activities which physically move the raw material between these nodes and points, discussed below.) The activity nodes and their interrelation are all generated (and structured into more or less regularized patterns), first through the contradictory interplay of internal forces and relations of production. They are thus shaped by the dialectical pressures of immediate class relations⁶² and technological change⁶³ in workplaces, the classical stuff of critical political economy.

But secondly, as already mentioned, these nodes and points of transfer are the focus of the structuring interventions of a potentially wide range of institutions, and are shaped through them. The interventions may be intentional, inadvertent, or secondary to the routine intentions of agents operating within the staple. Interventions affecting a node of activity may be conducted through institutions that operate either within, or largely outside this staple space (the latter enjoying varying degrees of institutional autonomy from the staple). Interventions may occur directly at the point they are intended to affect, and may occur within or between different institutions. Alternatively, the interventions may occur at one point, and the impact may be transmitted within or between different institutions along the array of nodes forming the linear space of the staple, to the node that is the object of intervention.

⁶¹ Raikes, Jensen, and Ponte, "Gcc Analysis and the French *Filière* Approach," 401.

⁶² Thus, to give but one example, upward pressures on the wage bill and restrictions on the capacity of management to control the work process in bush operations resulted from twentieth-century unionization in the forest industry in northern Ontario. This has been associated with the mid-twentieth century capital intensification of those operations, regaining both a lesser wage bill and greater managerial control after many years of relatively low capital intensity. Ian Radforth, *Bushworkers and Bosses: Logging in Northern Ontario, 1900-1980* (Toronto: University of Toronto Press, 1987), Ian Radforth, "Woodworkers and the Mechanization of the Pulpwood Logging Industry of Northern Ontario, 1950-1970," *Historical Papers* (1982).

⁶³ But continue the example, the better to consider the technological side of this dialectic: capital intensification having often taken the form of integrated harvesting units, these new harvesting machines not only drastically shrink the labour force (and parenthetically improved working conditions for those who remained), but also bring together stages in the work process that had hitherto been conducted separately and in different physical locations. Eric Young, "Newfoundland Timber Harvesting Logging Systems in Use Today," in *FPD Internal Report* (Corner Brook: Newfoundland, Forest Service, Forest Products & Development Division, 1994), Eric M. Young, "The Implications of Mechanical Harvesting in Newfoundland," *FEIS Information Report 22* (1998).

The most obvious interventions at particular nodes or points of transfer take the form of capital in money and all its other forms. These interventions may be ‘positive’ or ‘negative’: for example, capital investments may enter the staple structure, but various payments may also be diverted from the staple chain, including the much debated capture of rents.⁶⁴ Once allocated, captured rents and other payments can then 1) be re-deployed by institutions in new investments up and down the supply chain, 2) be invested in the institutions’ various intervention capacities themselves, or 3) simply be drawn away from the staple structure entirely for re-investment or consumption elsewhere in the economy. Investments can similarly be transferred along the staple chain itself for realization at other nodes, for example by internal pricing schemes that have been alleged to ensure rents generated but not diverted at the harvest site are actually realized as super-profits at the point of secondary processing.

Other interventions are perhaps less obvious, but are equally important: authoritative or persuasive institutional messages, whether private or public. These may be communicated directly to agents acting at a specific node. Alternatively (as will be explained below), if the institution in question has an integrative impact along a range of nodes, interventions may be communicated along the staple chain. An example of the latter communication occurs when a pulp and paper company restructures and out-sources its bush operations to highly dependent micro-contractors in order to accommodate a just-in-time delivery system at its mill operations.⁶⁵

Finally, there may be interventions that consist of injections or diversions of physical volumes of the raw material itself. These may merely be particular embodiments of capital, just discussed, but the material may equally be contribute to non-capitalist uses or disposed of as saleable by-product or as discounted waste.

The raw material, capital, and communications: these three analytically distinct but potentially overlapping modes of intervention also constitute the three primary types of flow that pass along the staple chain itself as a matter of the chain’s core operations. The flow of raw material in particular is essential to the continued existence of a staple – to borrow terms, each staple in this sense generates a ‘holey space’ (Deleuze and Guattari) in following this material flow. But each of the three flow types depends on an adequate transportation and communications infrastructure, and the latter is what may also serve as media for other institutional policies.

⁶⁴ Eric Kierans, "Natural Resources Policy in Manitoba," (Secretariat for the Planning and Priorities Committee of Cabinet, Government of Manitoba, 1973). John Richards and Larry Pratt, *Prairie Capitalism: Power and Influence in the New West*, 1st ed. (Toronto: McClelland and Stewart Ltd., 1979).. The analysis is complicated by the rent capture debate occurring largely in the language of marginal economics, while Harvey shows in considerable detail how critical political economy continues the more classical distinction between ground rent and other rent types. While ground rent in the latter sense can in some sense be subject to rent capture in the first sense, ground rent is seen as having distinct origins.

⁶⁵ Glen Norcliffe and Judy Bates, "Implementing Lean Production in an Old Industrial Space: Restructuring at Corner Brook, Newfoundland, 1984-1994," *Canadian Geographer* 41, no. 1 (1997).

Under what circumstances will the staple chain effectively transmit interventions? This question demands more detailed analysis. Activity nodes are arranged serially: this is not merely the logic of a given division of labour, abstracted from space. Typically, the serial array of activity nodes is organized in a segmented, broadly linear space, linked by communications and transportation infrastructure. In broad terms, this linear space runs from the physical location of concentrations of raw material, to urban centres.

Linear staple space is significant in the exercise of social and political power because it cuts across the territorial boundaries of formal jurisdictions, of informally constituted industrial regions, or of both. This linear space, when viewed as a *unity*, demarcates (at a minimum) boundary-crossing raw material flows, and the investments, communications, norms, and institutions coordinating that path. In discussing such trans-boundary objects of governance, one may become preoccupied with the interaction of multiple *levels* of governance, since successively higher levels of governance institutions exercise successively wider geographic authority, and in principle, they can follow the flows further. The alternative approach is to place linear staple space at the centre of potential policy solutions, as well as at the centre of the policy problem/object of governance.

In aggregate terms, multiple institutions experience limits in their capacity to intervene directly in staple activity nodes. It is highly unlikely that these limits or boundaries would vary in a totally random manner; but neither does it seem self-evident that institutional boundaries will cluster at the boundaries of *state-jurisdictional* spaces. For example, Storper and Walker have argued that to think concretely of an industry in spatial terms, one is commonly compelled to think of an industry-region rather than an industry or collection of firms that makes locational decisions. They further define an industry/region empirically by the geographic limits of non-market institutionalized relations between firms.⁶⁶ The point might be applicable to regional concentrations of resource activity in rural areas such as the Sudbury basin in minerals. Thus industry-regions as much as formal state jurisdictions generate *de facto* boundaries which constitute the geographic limits of the operation of multiple institutions.

Viewed as a *segmented* unity, however, a staple consists of a series of distinct activities whose integration (and therefore whose capacity to serve as a medium for power) needs to be spelled out. As a matter of historical development, commodity chains have rarely been generated and coordinated wholly from single nodes in the chain outward. Processes of articulation (or integration) link previously unarticulated nodal elements, and condition them to one another. This can occur for mutually agreed reasons, but can also be an expression of unilateral power.

Historically, we see that nodes remain liable to de-couple from one setting, and re-couple elsewhere with other activities or activity chains. Thus, the Napoleonic blockade on the Baltic timber trade in the early 1800s decoupled long-established relations between British merchant houses with brokers and semi-feudal timber production relations in the

⁶⁶ Storper and Walker, *The Capitalist Imperative: Territory, Technology and Industrial Growth*. In this sense, 'market' is defined in their work in terms of conditions approaching classical perfect competition among mutually independent equals.

Baltic States. The blockade was directly linked on the dependence of the British navy on Baltic conifers for masting their ships of the line.⁶⁷ Some merchant houses rapidly re-oriented their brokerage and shipping activities to forge new couplings with pioneering merchants and timber suppliers among the settler farmers of New Brunswick and the Ottawa Valley. Alternatively, in the new, under-populated context, some generated entirely new extractive, driving, and processing plant on a capitalist basis; and entirely new companies emerged in the region.⁶⁸

As media reports have increasingly suggested in 2005, an equivalent de-coupling/re-coupling process may occur, particularly in a variety of Canadian energy staples in the future (oil and gas, but also coal), with the additional rapid emergence of Chinese state resource companies as direct investors in tightening world resource markets. The de-coupling of Vancouver, BC, from the staple industries that continued to dominate the BC hinterland sparked a debate in academic circles in the 1990s about the province entering an urban- and services-dominated 'post-staples' economic period.⁶⁹

The Baltic-British coupling had been fundamentally mercantile, with feudal production relations conducting the initial nodes in the chain. Crucially, this structured the merchant houses in ways that influenced how their new relationship evolved with local production in North America.⁷⁰ Either a mercantile relationship was re-established with local retail merchants and generated the seasonal work patterns of the *système agro-forestier*, or considerable up-front investments were necessary in more wholly new production activities. In short, the mutual conditioning process was powerful during the new couplings, but did not fully determine the institutional structuring of the new chain.

This coupling/decoupling experience in history is a reminder that transmission of institutional policy interventions is possible along the staple chain, in the first place because of the integrative or articulating role of institutions. The segmentation of the unity of the staple complex is abated to a greater or lesser degree, and along a greater or lesser range of nodes, because a potentially wide variety of institutional forms, each with a particular capacity for influential, coordinated intervention at two or more nodes of activity. A non-exhaustive list of such institutional forms with integrative effects would include different levels of state, firms, business associations, unions, civil-societal organizations, and (increasingly) non-state, market-driven authorities such as certification programmes. There is no reason to assume by any definition of these institutions that there is any necessary complementarity of function among them, or even a common range of influence in space.

⁶⁷ Sing C. Chew, *Logs for Capital: The Timber Industry and Capitalist Enterprise in the Nineteenth Century* (Westport Connecticut: Greenwood, 1992), ARM Lower, *The North American Assault on the Canadian Forest* (Toronto: Ryerson Press, 1938), 13-43. Robert Greenhalgh Albion, *Forests and Sea Power: The Timber Problem of the Royal Navy, 1652-1862* (Hamden, Conn.: Archon Books, [1926] 1965).

⁶⁸ Lower, *North American Assault*.

⁶⁹ Barnes and Hayter, "British Columbia's Private Sector in Recession.", Davis, "Uncoupling?.", Davis and Hutton, "Two Economies.", Davis and Hutton, "Structural Change.", Howlett, "De-Mythologizing.", Hutton, "The Innisian Core-Periphery Revisited."

⁷⁰ Chew, *Logs for Capital: The Timber Industry and Capitalist Enterprise in the Nineteenth Century*.

Less formalized quality norms or *conventions* may also emerge amongst stakeholders and shape their routinized practices, cutting through and across distinct institutional types, and operating potentially along the length of the chain. Boltanski and Thévenot have identified at least six distinct notions of common welfare, constitutive of quite distinct normative ‘worlds’ or ‘*grandeurs*’ with distinctive ‘justifications’ for common undertakings. Allaire and Boyer have made the argument that at least four of these (the other two are inspiration- and opinion-based) may acquire integrative force along a commodity chain, generating distinct quality conventions for productive activity. These may be structured *domestically* around long-term trust relations built up in key regions (wines from Burgundy or cheeses from Oka, Québec), or be structured around *industries* (German car engineering), value implied in the asked product *price* (the assumed quality of expensive perfumes), or by *civic* institutions (as with third-party certification systems like the MSC or FSC).⁷¹

These institutional forms are of interest in the present discussion because, taken individually, they may intervene in multiple nodes of activity, both with intent and simultaneously; and they thus establish nascent transportation and communications links, facilitating the three major flow types amongst those nodes. Once established for specific purposes of a given institution, such links are potentially available for other communications, including the exercise of various kinds of power. Thus, an integrated firm like Weyerhaeuser can take a log from stump to a Home Depot warehouse, because its governance is comprehensive over all the intervening nodes in that chain. The US state of Georgia could potentially have a similar comprehensive influence over the same log if stump, warehouse, and intervening mills all lay within state boundaries. Activists concerned about the sustainability of logging in Georgia (typically the most remote node in the chain from their area of most effective activity) could potentially seek to influence either corporate or governmental institutions at many different points along the staple chain.

Such processes of institutional integration of the staple cannot be stated a priori in any detail, and it seems reasonable to associate the grounds for this with features affecting the staple’s availability to serve as a medium for power. These grounds include variability in 1) the range of nodes along the chain that the institutional forms may coordinate (Sasser’s (2003) integration); 2) the number of similar institutions and the variety of institutional forms influencing any given node (Sasser’s (2003) concentration); and 3) the degree of complementarity of these intervening institutional forms with respect to one another, whether at any single node or along a range of nodes.⁷² That is, institutional interventions that structure activity at each node are not necessarily coordinated with one another, even if the diverse institutions that intervene are each integrating a variety of their own

⁷¹ Allaire and Boyer, qtd. in Raikes, Jensen, and Ponte, "Gcc Analysis and the French *Filière* Approach."; cf. Wilkinson, "New Paradigm?," 318-21.

⁷² Sasser is concerned with firm behaviour, and defines the staple more narrowly as a series of markets amongst firms. She therefore does not introduce concerns about the coordination of a variety of different institutional types. Parallel effects from specific production technologies are evident in each of these three dimensions of variation; one must also consider the interaction between these effects and those arising from more immediate technological forces.

interventions along the same range of nodes. Weyerhaeuser must thus contend with aboriginal, environmental and state interventions at the stump and at other points in the chain. These interventions may differ both in policy orientation (as when firms and environmental organization debate raising or lowering annual allowable cut) and in policy problems (whether one seeks to influence sustainable cutting or worker health and safety in the bush). This fits rather well with the fact of secondary multi-stakeholder institutions emerging at a given node or range of nodes (such as the Iisaak process coordinating extractive activities on the BC West Coast⁷³) to coordinate the interventions of different institutions.⁷⁴

Institutional integration links up with the distinction already made between nodes of productive activity and points of transfer. At certain points along the chain, the range of nodes affected by a given institutional form will begin or end. There may be simply an end of a given institution's interventions beyond this point. Alternatively, there may be a formal process for a final intervention and/or transferring responsibility to a new institution. Of particular interest at such transfer points are the activities of institutions formally claiming custody or jurisdiction over the raw material flow. Here one can think of customs and other procedures between jurisdictions at a jurisdictional boundary, or a formal market exchange, at which point a private firm realizes the added value of their capital investment.

Finally, along a range of nodes of activity where institutional and technological integration effects are multiple, powerful, and complementary, one would anticipate only limited de-coupling and re-coupling potential, and a relatively high potential for the staple to operate as a medium of power. Where institutional and technological coordination effects are few, weak, or contradictory, as with one of the official transfer points mentioned in the previous paragraph, one would anticipate a greater tendency for de-linking and re-linking activity, and a lower potential for the staple to operate as a medium of power. Given how such points have just been construed, these would be points where raw material transfers more nearly approaching free-market exchanges would predominate.

With the horsetail image at hand, one can more easily discuss a certain dissonance of the imagery: namely, the commonsense usage of 'vertical' integration in firms, while here, the base assumption is 'horizontality' in the array of nodes in a commodity chain. The linguistic problem reveals a conceptual one. First, by virtue of the definition of market exchange, they occur *between legal equals* and hence on a conceptually horizontal basis over against vertical hierarchies. Second, a supply chain is organized geographically as a boundary-crossing linear space. Third, under the rubric of 'horizontality', governance

⁷³ Canadian Press, "Small Scale Logging Begins in Clayoquot," *Canadian Press*, Wednesday, August 23 2000. Magnusson and Shaw

⁷⁴ Gunther Teubner has conceived of a similar 'linkage institution' coordinating divergent social systems at the international level on the basis of mutual acceptance or rejection. Gunther Teubner, ed., *Global Law without a State* (Aldershot: Dartmouth, 1997), 14-5.

literature is currently wrestling with the problem of coordination between governance institutions that are not subordinate in relation to one another.⁷⁵

What 'vertical' integration does underscore, however, is that firms typically do organize the range of nodes of activity under their jurisdiction into a decision-making hierarchy, a hierarchy defined relative to some core institutional mandate. This is expressed both in an institution's privileging of particular nodes of activity, and in the location of the institution's decision-making centres. This is all implicit in the Gereffi opposition of buyer- and producer-dominated commodity chains.⁷⁶ The present discussion, however, would apply this observation about firms to other integrating institutions as well.

Within the twentieth-century forest industry, major firms typically integrate a wide range of nodes, but their mandates are clearly oriented to secondary processing. Bush operations are subordinated to the mill, their highest operational priority being the provision of a reliable supply of fibre. Bush operations may be outsourced as satellite firms, without altering the parent firm's essential identity. Alternatively, land management firms may also exist with no more than contractual arrangements to particular mills, and emphasize the long-term value of the land as their main priority. Their bush operations would have a quite different relationship to the core business, and outsourcing bush work might well be perceived as a major reorientation.

This question of institutional verticality, and of its distribution along a range of activity nodes in the staple chain, is but one of the important questions about the institutional structure of intervening institutions. Other questions would centre on 1) the degree of self-referential autonomy the institution exercises, both operationally and epistemologically;⁷⁷ 2) the degree to which the organization operates in an 'institutionalized' fashion, adopting the verticality of a Weberian ideal-typical bureaucratic form;⁷⁸ 3) the nature of the principal goals sought through interventions (for example, environmental sustainability, corporate profitability, worker health and safety, etc.) and the degree of integration of these goals with the core mission of the organization; 4) the concrete internal processes whereby an institutional 'policy' cycle is executed with respect to staples interventions; and 5) the degree to which distinct

⁷⁵ [horizontality]

⁷⁶ Some of the earliest medieval staples centred on the buyer community, others on the producers. The latter staples commonly emerged early: staples were to guarantee raw material supplies to medieval towns and cities. But the wool staple courts which supplied much of France and the Low Countries with English wool were in fact English institutions abroad; there is evidence of power struggles over the centres that would have sway over staples institutions, which could include the expulsion of foreign merchants from a kingdom.

M.M. Postan, E.E. Rich, and Edward Miller, *The Cambridge Economic History of Europe, Vol. Iii: Economic Organisation and Policies in the Middle Ages* (Cambridge: Cambridge University Press, 1965), 172-79, E.E. Rich and C.H. Wilson, *The Cambridge Economic History of Europe, Vol. V: The Economic Organisation of Early Modern Europe* (Cambridge: Cambridge University Press, 1977), 268-87, 316-55, 460-73.

⁷⁷ James Lawson and Benjamin Cashore, "Research Note: The Application of the Theory of Social Autopoiesis to the Problem of Non-State Sanctioned, Market-Driven (Nsmd) Governance," in *Forest Policy Center Internal Working Paper Series*. (2001).

⁷⁸ A. Paul Pross, *Group Politics and Public Policy* (Toronto: Oxford University Press, 1986).

interventions in the staples supply chain have been integrated into a single coherent strategy. These are crucial factors in understanding the institutional setting out of which interventions arise and within which integration occurs. They require separate consideration, however, and are abstracted from the simplifying horsetail model, in which only the interventions themselves are portrayed. (a few sentences to summarize the implication of this dissonance or the relationship between dissonance and you're your horsetail image)

Hypotheses and Conclusion

To conclude briefly, the purpose of this paper was to survey the institutional conditions for effective instrumentalization of the staple itself as a medium of institutional policies. At a minimum, the foregoing discussion suggests that the following features of a raw material commodity should tend to facilitate the deployment of power along this distinctive, linear, and boundary-crossing space. These factors should be studied further, but appear to be reasonable factors to take into account when considering the viability of a 'ricochet effect' or some other attempt to mobilize the staple strategically as a medium of power:

- Limitation of the total number of nodes between the intervention node and the policy target node;
- Limitation of total governance interventions;
- Coordination of diverse governance interventions;
- Institutional concentration at particular nodes of activity (Sasser);
- Institutional integration along a wide range of nodes (versus the multiplication of market transfers – Sasser);
- Reputational concentration of institutional responsibility for activities at particular nodes, as viewed by intervening institutions at other nodes.

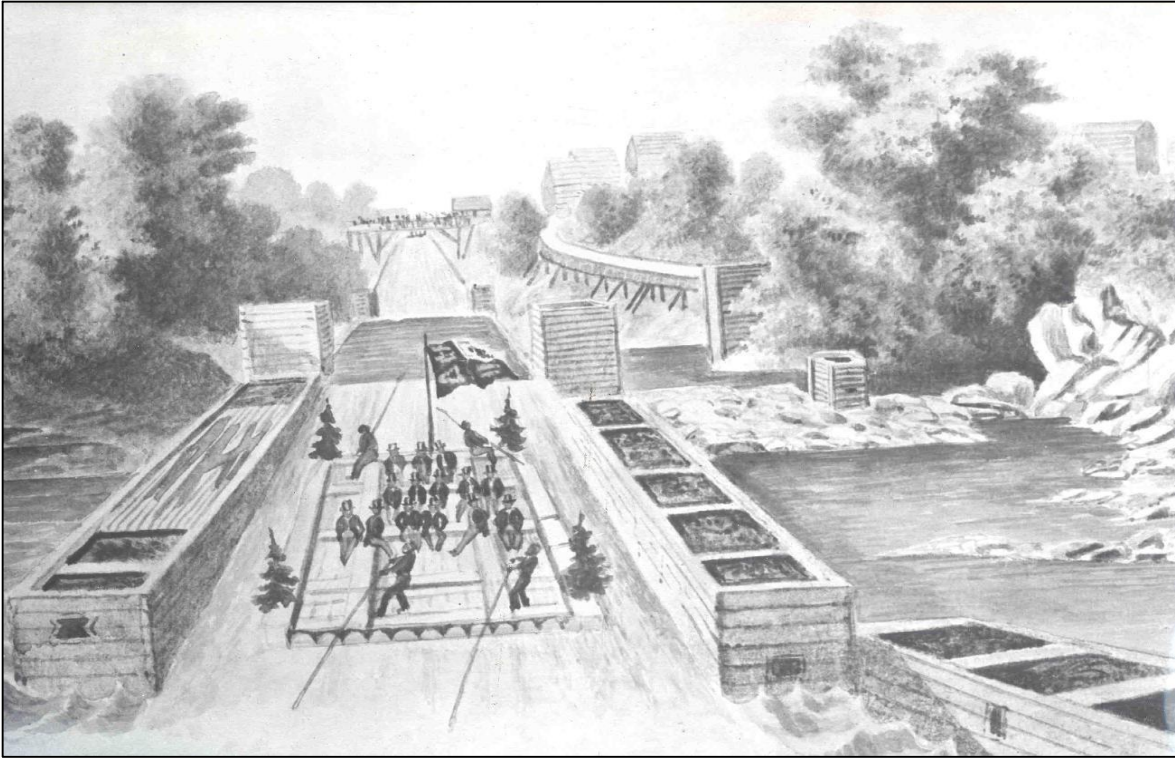
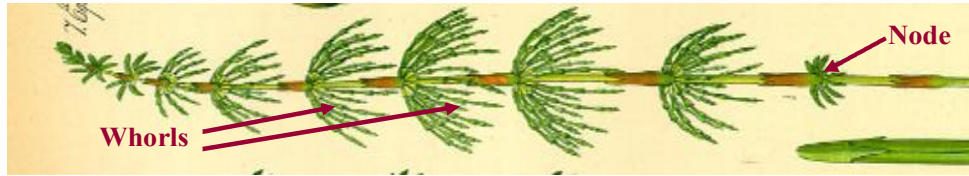


Plate 1: 'Sovereignty Rides a Supply Chain'. Available at <http://www.bytownmuseum.com/capital.html>. Last accessed February 20, 2005

Horsetail Image: The Staple/Supply Chain



- “Stem”: Transmission of signals; resistance from intervention effects at nodes; reinforcement by institutional integrations
- “Nodes”: centres of activity
- “Whorls”: multiple interventions to stem, diversions from stem, located at nodes

Plate II: Horsetail Image – Key Elements

(Image adapted from: Otto Wilhelm Thomé, ‘Image of Equisetum pratense (Equisetaceae)’ *Flora von Deutschland, Österreich und der Schweiz* (Publisher Unknown: Gera, Germany, 1885). Image available at http://caliban.mpiz-koeln.mpg.de/~stueber/thome/band1/tafel_018.html. Last accessed February 20, 2005)

Bibliography

- Albion, Robert Greenhalgh. *Forests and Sea Power: The Timber Problem of the Royal Navy, 1652-1862*. Hamden, Conn.: Archon Books, [1926] 1965.
- Barnes, Trevor, and Roger Hayter. "British Columbia's Private Sector in Recession, 1981-86: Employment Flexibility without Trade Diversification?" *BC Studies* 98 (1993): 20-42.
- Barnes, Trevor, and others. "Focus: A Geographical Appreciation of Harold A. Innis." *The Canadian Geographer* 37, no. 4 (1993): 352-64.
- Benton, Ted. "Marxism and Natural Limits: An Ecological Critique and Reconstruction." In *The Greening of Marxism*, edited by Ted Benton, 157-83. New York: Guilford Press, 1996.
- Bertramsen, René B., Jens Peter Frolund Thomsen, and Jacob Torfing. *State, Economy and Society*. London: Unwin-Hyman, 1991.
- Boismenu, Gérard, and Daniel Drache. *Politique Et Régulation: Modèle De Développement Et Trajectoire Canadienne*. Montréal: Editions L'Harmattan-Éditions du Méridien, 1990.
- Boyer, Robert. *The Regulation School: A Critical Introduction*. Translated by Craig Charney. New York: Columbia University Press, 1990.
- . "State and Market: A New Engagement for the Twenty-First Century?" In *States against Markets: The Limits of Globalization*, edited by Robert Boyer and Daniel Drache. London: Routledge, 1996.
- Brenner, Robert. "The Origins of Capitalist Development: A Critique of Neo-Smithian Marxism." *New Left Review* 104 (July-August 1977): 25-92.
- Canadian Press. "Small Scale Logging Begins in Clayoquot." *Canadian Press*, Wednesday, August 23 2000, From Globe and Mail web site <http://www.globeandmail.com>.
- Cashore, Benjamin, Graeme Auld, and Deanna Newsom. *Governing through Markets: Forest Certification and the Emergence of Non-State Authority*. New Haven: Yale University Press, 2004.
- Chew, Sing C. *Logs for Capital: The Timber Industry and Capitalist Enterprise in the Nineteenth Century*. Westport Connecticut: Greenwood, 1992.
- Child, John, and David K. Tse. "China's Transition and Its Implications for International Business." *Journal of International Business* 32, no. 1 (2001): 5-21.
- Clark-Jones, Melissa. *A Staple State: Canadian Industrial Resources in Cold War*. Toronto: University of Toronto Press, 1987.
- Clement, Wallace. *Continental Corporate Power: Economic Linkages between Canada and the United States*. Toronto: McClelland and Stewart, 1977.
- Copithorne, Lawrence. "Natural Resources and Regional Disparities: A Skeptical View." *Canadian Public Policy* 5, no. 2 (Spring 1979): 181-94.
- Cutler, A. Claire. *Private Power and Global Authority*. Cambridge, UK: Cambridge University Press, 1999.
- Davis, H. Craig. "Is the Metropolitan Vancouver Economy Uncoupling from the Rest of the Province?" *BC Studies* 98 (1993): 3-19.
- Davis, H. Craig, and Thomas Hutton. "The Two Economies of British Columbia." *BC Studies* 82 (1989): 3-15.
- Davis, H. Craig, and Thomas A. Hutton. "Structural Change in the British Columbia Economy: Regional Diversification and Metropolitan Transition." 51. Vancouver: British Columbia Round Table on the Environment and the Economy, 1992.
- Deleuze, Gilles, and Félix Guattari. *A Thousand Plateaus: Capitalism and Schizophrenia*. Translated by Brian Massumi. Minneapolis: University of Minnesota Press, 1987.
- Drache, Daniel. "Introduction -- Celebrating Innis: The Man, the Legacy, and Our Future." In *Staples, Markets, and Cultural Change: Selected Essays, Harold A. Innis*, edited by Daniel Drache, xiii-lix. Montreal-Kingston: McGill-Queen's University Press, 1996.
- . "Rediscovering Canadian Political Economy." In *A Practical Guide to Canadian Political Economy, 2nd Ed.*, edited by Wallace Clement and Daniel Drache, 1-53. Toronto: James Lorimer, 1982.
- Gereffi, Gary. "Global Sourcing in the Us Apparel Industry." *Journal of Textile and Apparel Technology and Management* 2, no. 1 (2001): 1-5.
- . "Shifting Governance Structures in Global Commodity Chains, with Special Reference to the Internet." *The American Behavioral Scientist* 44, no. 10 (2001): 1616.

- Gereffi, Gary, and Miguel Korzeniewicz, eds. *Commodity Chains and Global Capitalism*. Westport, CT: Greenwood Press/Praeger, 1994.
- Gramsci, Antonio. *Selections from the Prison Notebooks*. Translated by Geoffrey Nowell Smith Quintin Hoare. New York: International Publishers, 1971.
- Hammond, Lorne F. "Capital, Labour and Lumber in A.R.M. Lower's Woodyard: James Maclaren and the Changing Forest Economy, 1850-1906." Ph.D., University of Ottawa, 1993.
- Haraway, Donna. *Simians, Cyborgs, and Women: The Reinvention of Nature*. London, 1991.
- Harvey, David. *The Condition of Postmodernity*. London: Oxford University Press, 1989.
- . *The Limits to Capital*. Chicago: University of Chicago Press, 1982.
- Hayter, Robert, and Trevor Barnes. "Innis' Staple Theory, Exports, and Recession: B.C. 1981-86." *Economic Geography* 66, no. 2 (1990): 156-73.
- Hayter, Roger. *Flexible Crossroads: The Restructuring of British Columbia's Forest Economy*. Vancouver: University of British Columbia, 2000.
- Howard, Teresa. "Can You Hear Me Now?" a Hit February 22 2004 [cited May 15 2005]. Available from http://www.usatoday.com/money/advertising/adtrack/2004-02-22-track-verizon_x.htm.
- Howlett, Michael. "De-Mythologizing Provincial Political Economies: The Development of the Service Sectors in the Provinces, 1911-1991." In *Provinces: Canadian Provincial Politics*, edited by Christopher Dunn, 423-48. Peterborough, ON: Broadview Press, 1996.
- , ed. *Canadian Forest Policy: Regimes, Policy Dynamics and Institutional Adaptations*. Toronto: University of Toronto Press, 2001.
- Howlett, Michael, and M. Ramesh. *Studying Public Policy: Policy Cycles and Policy Subsystems*. 2nd ed. Toronto: Oxford University Press, 2003.
- Hutton, Thomas A. "The Innisian Core-Periphery Revisited: Vancouver's Changing Relationship with British Columbia's Staple Economy." *BC Studies* 113 (1997): 69-100.
- Innis, Harold A. *The Bias of Communication*. Edited by Paul Heyer and David Crowley. Toronto: University of Toronto Press, 1991.
- . *The Cod Fisheries: The History of an International Economy*. rev. ed. Toronto: University of Toronto Press, 1954.
- . *Staples, Markets, and Cultural Change: Selected Essays*. Translated by Daniel Drache. Kingston-Montréal: McGill-Queen's, 1995.
- Johnson, Todd M. "Foreign Involvement in China's Energy Sector." In *China Joins the World: Progress and Prospects*, edited by Elizabeth Economy and Michel Oksenberg, 266-95. New York: Council on Foreign Relations Press, 1999.
- Kierans, Eric. "Natural Resources Policy in Manitoba." Secretariat for the Planning and Priorities Committee of Cabinet, Government of Manitoba, 1973.
- Klein, Naomi. *No Logo*: Picador, 1999.
- Lawson, James, and Benjamin Cashore. "Research Note: The Application of the Theory of Social Auto-poiesis to the Problem of Non-State Sanctioned, Market-Driven (NSMD) Governance." In *Forest Policy Center Internal Working Paper Series.*, 2001.
- Lieberthal, Kenneth, and Michel Oksenberg. *Policy Making in China: Leaders, Structures, and Processes*. Princeton, NJ: Princeton University Press, 1987.
- Lower, A.R.M. *Canada and the Far East -- 1940*. New York: Institute of Pacific Relations, 1940.
- Lower, ARM. *The North American Assault on the Canadian Forest*. Toronto: Ryerson Press, 1938.
- Magnusson, Warren. *The Search for Political Space*. Toronto: University of Toronto Press, 1995.
- McLuhan, Marshall. *Understanding Media: The Extensions of Man*. New York: McGraw-Hill, 1965 (1964).
- McNally, David. "Staple Theory as Commodity Fetishism: Marx, Innis and Canadian Political Economy." *Studies in Political Economy* 6 (1981): 35-64.
- Meidinger, Errol. "Environmental Law for Global Civil Society: The Forest Certification Prototype (Draft 1.3)." In *Paper presented for the Conference on Social and Political Dimensions of Forest Certification, University of Freiburg, Germany, June 20-22, 2001*, 2001.
- M'Gonigle, Michael, and Ben Parfitt. *Forestopia: A Practical Guide to the New Forest Economy*. Madeira Park: Harbour Publishing, 1994.
- Micheletti, Michele. "'Put Your Money Where Your Mouth Is!': The Market as an Arena for Politics." In *Market Matters: Exploring Cultural Processes in the Global Marketplace*, edited by Christina Garsten and Monic Lindh de Montoya, 114-34. London: Palgrave/Macmillan, 2004.

- Mjoset, Lars. "Nordic Economic Policies in the 1970s and 1980s." *International Organisation* 41, no. 3 (1987): 403-56.
- Navarro, Pablo, Barbara Neis, Martha MacDonald, and James Lawson. "Statistical Report on Forestry and Forestry-Related WHSCC Claims, 1990-2002." St. John's, NL: Coasts under Stress, Memorial University of Newfoundland, 2004 (forthcoming).
- Naylor, R.T. "The Rise and Fall of the Third Commercial Empire of the St. Lawrence." In *Capitalism and the National Question in Canada*, edited by Gary Teeple, 1-43. Toronto: University of Toronto Press, 1972.
- Neill, Robin. *A History of Canadian Economic Thought*. London: Routledge, 1991.
- . *A New Theory of Value: The Canadian Economics of H.A. Innis*. Toronto: University of Toronto Press, 1972.
- Norcliffe, Glen. "Regional Labour Market Adjustments in a Period of Structural Transformation: An Assessment of the Canadian Case." *The Canadian Geographer* 38, no. 1 (1993): 2-17.
- Norcliffe, Glen, and Judy Bates. "Implementing Lean Production in an Old Industrial Space: Restructuring at Corner Brook, Newfoundland, 1984-1994." *Canadian Geographer* 41, no. 1 (1997): 41-60.
- Osborne, D., and T. Gaebler. *Reinventing Government*. Reading, MA: Addison-Wesley, 1992.
- Parker, Ian. "Harold Innis, Karl Marx and Canadian Political Economy." In *Class, State, Ideology and Change*, edited by Paul Grayson, 361-72. Toronto, 1980.
- Postan, M.M., E.E. Rich, and Edward Miller. *The Cambridge Economic History of Europe, Vol. Iii: Economic Organisation and Policies in the Middle Ages*. Cambridge: Cambridge University Press, 1965.
- Pross, A. Paul. *Group Politics and Public Policy*. Toronto: Oxford University Press, 1986.
- Radforth, Ian. *Bushworkers and Bosses: Logging in Northern Ontario, 1900-1980*. Toronto: University of Toronto Press, 1987.
- . *Royal Spectacle: The 1860 Visit of the Prince of Wales to Canada and the United States*. Toronto: University of Toronto Press, 2004.
- . "Woodworkers and the Mechanization of the Pulpwood Logging Industry of Northern Ontario, 1950-1970." *Historical Papers* (1982): 71-102.
- Raikes, Philip, Michael Friis Jensen, and Stefano Ponte. "Global Commodity Chain Analysis and the French *Filière* Approach: Comparison and Critique." *Economy and Society* 29, no. 3 (2000): 390-417.
- Rich, E.E., and C.H. Wilson. *The Cambridge Economic History of Europe, Vol. V: The Economic Organisation of Early Modern Europe*. Cambridge: Cambridge University Press, 1977.
- Richards, John, and Larry Pratt. *Prairie Capitalism: Power and Influence in the New West*. 1st ed. Toronto: McClelland and Stewart Ltd., 1979.
- Rosenau, James N. "Governance, Order, and Change in World Politics." In *Governance without Government: Order and Change in World Politics*, edited by James N. Rosenau and Ernst-Otto Czempel, 1-29. Cambridge, UK: Cambridge University Press, 1992.
- Ross, Michael L. "The Political Economy of the Resource Curse." *World Politics* 51, no. 2 (1999): 297-322.
- Rotstein, Abraham. "Innis: The Alchemy of Fur and Wheat." *Journal of Canadian Studies* 12, no. 5 (1977): 6-31.
- Sasser, Erika N. "Gaining Leverage: Ngo Influence on Certification Institutions in the Forest Products Sector." In *Forest Policy for Private Forestry: Global and Regional Challenges*, edited by L. Teeter, B. Cashore and D. Zhang. Wallingford, UK: CABI Publishing, 2003.
- Sepulchre, Alain. "Energy and Globalisation: Oil and Gas in China." *China Perspectives* 54 (2004): 17-28.
- Storper, M., and R. Walker. *The Capitalist Imperative: Territory, Technology and Industrial Growth*. Oxford: Basil Blackwell, 1989.
- Teubner, Gunther, ed. *Global Law without a State*. Aldershot: Dartmouth, 1997.
- Watkins, M.H. "A Staple Theory of Economic Growth." In *Approaches to Canadian Economic History*, edited by W.T. Easterbrook and M.H. Watkins, 41-98. Toronto: McClelland and Stewart Limited, [1963] 1967.
- Watkins, Mel. "Canadian Capitalism in Transition." In *Understanding Canada: Building on the New Canadian Political Economy*, edited by Wallace Clement, 19-42. Kingston-Montreal: McGill-Queen's University Press, 1997.
- . "The Staple Theory Revisited." *Journal of Canadian Studies* 12, no. 5 (Winter 1977): 83-95.
- Wilkinson, J. "A New Paradigm for Economic Analysis?" *Economy and Society* 26, no. 3 (1997): 305-39.

- Williams, C. "Prince of Wales in Canada Descending a Timber Slide at Ottawa, 1860." Ottawa: Bytown Museum, 1860.
- Wood, Ellen Meiksins. "Capitalism, Merchants and Bourgeois Revolution: Reflections on the Brenner Debate and Its Sequel." *International Review of Social History* 41 (1996): 209-32.
- York, Geoffrey. "An Era Ends as China Becomes an Aid Donor." *Globe and Mail* 2005, A3.
- Young, Eric. "Newfoundland Timber Harvesting Logging Systems in Use Today." In *FPD Internal Report*, 9. Corner Brook: Newfoundland, Forest Service, Forest Products & Development Division, 1994.
- Young, Eric M. "The Implications of Mechanical Harvesting in Newfoundland." *FEIS Information Report* 22 (1998): 1-8.