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The Staple Theory @ 50

Reflections on the Lasting Significance of Mel Watkins' "A Staple Theory of Economic Growth"

Edited by Jim Stanford

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UNIFOR

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In loving memory of
Mel Watkins
May 15, 1932–April 2, 2020

The Staple Theory @ 50: Introduction

Jim Stanford

ONE OF Mel Watkins's most lasting and influential works was an article he published in 1963, "A Staple Theory of Economic Growth," in the *Canadian Journal of Economics and Political Science*. The article extended and updated earlier theoretical and empirical work by economic historian Harold Innis, who first described the successive waves of staples industries that shaped Canada's economic development, political economy, and social geography. Watkins took Innis's core idea, modernized it, and applied it to understanding the peculiarly unbalanced nature of Canada's postwar growth and development.

For example, Watkins used this updated model to help explain Canada's extreme reliance on foreign investment, the stunted nature of the domestic business class (concentrated in the finance and resource sectors), and the economic and geopolitical risks of that whole mode. This important article, and Watkins's other work at that time, thus formed a crucial link between the earlier staples scholarship of Innis and his contemporaries (like W.A. Mackintosh), and the emergence of an entire new school of radical Canadian political economy. It also laid the intellectual foundation for so many subsequent theoretical and policy interventions during the tumultuous 1960s and

1970s, including Watkins's own work on the Task Force on Foreign Ownership and the Structure of Canadian Investment (which reported in 1968).

A generation or two later, this work again demonstrated its lasting significance. Beginning early in the 2000s, Canada's economic and political trajectory came to be dominated by an unprecedented resource extraction and export boom focused on the petroleum industry, and on bitumen mining in northern Alberta, in particular. The negative side-effects of this boom quickly became obvious, including a destructive overappreciation of the Canadian dollar, negative spillovers on other export industries (like manufacturing), undue political influence of fossil fuel industries, tighter geopolitical integration into the U.S. orbit and, of course, horrible implications for Canada's performance in greenhouse gas emissions.

I gave a presentation to energy workers in early 2013 about the risks even they faced as a result of this overheated, out-of-control staples boom. When I cited Watkins's 1963 article in describing the origins of staples theory, it struck me suddenly that 50 years had passed since its first publication. The anniversary seemed like something to be noted and celebrated—all the more so given Canada's structural regression into renewed staples dependence.

So, with input from 20 of Watkins's legion of former students, colleagues and co-conspirators, we assembled a collection of short essays reviewing the legacy and continuing importance of that article. Initially published on the Progressive Economics Forum website, the collection was subsequently published by the CCPA as *The Staple Theory @ 50: Reflections on the Lasting Significance of Mel Watkins' "A Staple Theory of Economic Growth"*.

We invited Mel himself to contribute a rejoinder to the collection that might reflect on its varied contributions. Showing his typical modesty, he was initially reluctant to do so. But we talked him into it. And his eventual contribution was also typically self-critical. He argued that his own previous work had not been sufficiently cognizant of many of the now-recognized concerns of progressive political economy, including a critique of Canadian colonization and environmental concerns.

Mel rightly cautioned his acolytes (myself included) from re-applying his 1960s model mechanistically to the current circumstances—including particularly his proposals for strengthening forward and backward linkages to resource extraction—without adequately addressing new challenges, especially climate change. This demonstrated for me his principled and modest spirit of self-criticism, and his determined willingness to continue advancing our shared theory and activism.

Since then, of course, the bitumen boom has predictably gone bust, as did every previous staples boom in Canadian history. Western Canada Select oil is presently selling (at the wellhead) for almost $0. Beaver pelts are worth more than heavy oil. Jason Kenney and his war room partisans pretend they can somehow reverse this state of affairs with social media trolling, faux separatism and cruel austerity. Extracting ourselves from overreliance on petroleum extraction and export will be painful, but it is also inevitable. And it opens many promising economic, regional and environmental opportunities, as well.

I am confident that Canada will traverse that challenge successfully: the political and economic forces leading us away from petroleum dependence are ultimately unstoppable. I am sorry Mel Watkins won't be around to see it happen. But I am grateful for the inspiration and leadership he gave our progressive economics community, and me personally, to help us get there.

—Jim Stanford, economist and director of the Centre for Future Work, and a CCPA research associate

Part 1: Historical Pedigree

The Staple Theory Redux: On the Origin of Species

Abraham Rotstein

ALL THEORIES RETAIN the genes of their parents, and likewise the Staple Theory. The time was the early 1960s, the heyday of economic history at the University of Toronto. Harold Innis had died a decade earlier, but his legacy was alive and well. He had artfully overridden disciplinary boundaries in his books to focus on Canada as a society: the way it was conceived and nurtured. He showed how natural resources (staples) had played a central role throughout.

Innis had been impatient with the history written by his predecessors. Histories of early Canada regaled the country as a bastion of the British Empire, a bulwark against the ambitions of the French and of the Americans. Historically, Britannia ruled Canadian minds as much as it ruled the waves.

The historical literature on the fur trade at the time floated on an aura of purple prose — fur traders at sunrise paddling along the great rivers, singing in three-part harmony. It was the world of Cornelius Krieghoff ... but flying the Union Jack.

Economists in turn saw all this through still narrower lenses — namely, through the binoculars of "supply and demand". Staples with distinct-

ly different physical characteristics and very different histories, say fur and timber, all became "commodities", homogenized under the denominator "price." Rivers, mountains and prairies were screened as differential transport costs. Generally speaking, economic analysis pictured Canada as comprised of various shades of staples grey.

For Innis, who had personally canoed the old fur trade routes, had served as a deck hand on the steamers of the Yukon, had worked on the fishing boats of the Maritimes, this approach yielded a bloodless one-dimensional Canada. It hardly reflected the country that he knew first hand.

Innis did have a deep appreciation of the industrial achievements of modern capitalism (which he abbreviated as "the price system") but he sensed that neo-classical economics fell badly short in its portrayal of the country.

When he was in graduate school in Chicago, Innis had been influenced by the work of Thorstein Veblen. Innis claimed later that Veblen had waged "a constructive warfare of emancipation against the tendency toward standardized static economics," and against "the inclusiveness of price economics."

Innis searched for an alternative focus:

> Perhaps the most serious obstacle to effective work in Canadian economics and economic history is the lack of a philosophy of economic history applicable to new countries... Much of the work has been defective through the attempt to fit the phenomena of new countries to the economic theory of old countries.

For Innis the geographer, the classical supply-demand-price approach of the "old countries" had produced a "whiteout" of the Canada that he knew first-hand. How could he retrieve those formative features of its economy that had been sidelined, and portray the economy in its full dimensions? Innis used a "wide-angled lens" for his research, and this shaped his subsequent work on the fur trade and the cod fisheries.

Such was the origin of the staples thesis, an approach that highlighted the substantive features of the economy: its ecology and geography, its technology, and its institutions. It was only after the fact that this approach emerged more formally as a "theory," and this is where Mel Watkins enters the picture.

Mel Watkins had been a student of Harold Innis during Innis' latter days at the U of T. Subsequently Mel joined the Political Economy Department. That Department lived, at least for a while, in the afterglow of Innis' presence. The Department head, Tom Easterbrook, was a close associate of Innis and became a mentor to the young Watkins.

Mel Watkins knew he had a tradition to live up to. His previous stint as a graduate student at MIT did him surprisingly little damage, as was shown

later by the independent line he took on the control of foreign investment in Canada. But the main issues of the day had shifted from the time that Innis wrote. The new agenda of the 1960s had been established south of the border and was adopted everywhere else. Speaking for the U.S. State Department and indeed on behalf of the United Nations, Walt Rostow (also an economic historian) declared a "Decade of Development" ahead. All underdeveloped countries should take a leaf out of the experience of the developed countries, he argued, and embark on the path of self-sustaining industrial growth.

In the end, despite massive amounts of foreign aid, all this amounted to little more than a declaration of innocent myopia. Nevertheless, how to successfully launch a country onto this path to industrial growth was the challenge of the day.

Soon the difficulties loomed up: how could the less developed countries, so heavily dependent on the export of natural resources, proceed to launch new secondary industries? Countries were mired in their respective staples, with seemingly little chance of shifting into industrial development. Were these countries fated to drag their heels until they could extricate themselves from this staples dependence? How to escape from this debilitating role and move into the realm of high value-added manufacturing?

In the countries of Latin America, for example, staples were regarded as the albatross that had dragged them down during the time that the industrial giants such as the United States had raced ahead. Raoul Prebisch had launched the *dependencia* doctrine, the economic underpinning that animated much of the Latin American policy and political discussions of the time. In a nutshell, the doctrine maintained that Latin American countries were fated to backwardness over time because the terms of trade had consistently turned against raw materials in favour of the relatively higher prices commanded by manufactured goods. It followed that Latin American countries had, by any means they could muster, to jettison their dependence on staples in order to acquire the bounties of economic progress. Politically, this seemed to be the route as well to get out from under the thumb of the United States.

Enter Watkins' staple theory of economic growth, showing how Canada had in fact found a way out of its own staples dependence. Canada had, after all, emerged as a developed country despite its initial reliance on the export of staples. How had this occurred? That was the intriguing question that Watkins resolved in his classic 1963 article.

In Innis-like fashion, the answer came from casting a wider net; it meant pursuing the ramifications of staples production in an industrial age. Sta-

ples production had become more complex: it now required industrial equipment. Wheat production required tractors and harvesters; mineral production required elaborate mining machinery. How to take advantage of these opportunities?

There were further possibilities. Instead of simply digging things out of the ground and exporting them in their raw state, economic growth could come from further processing of these raw materials. Softwood lumber could be turned into paper by constructing paper mills. Flour mills could (and should) process the wheat into flour; steel mills should process the iron ore. Who would take up these industrial opportunities?

Here, Watkins argued, lay the key to the transition into industrial growth — the industrial linkages that staples production offered. He called these "backward linkages" for the machinery to produce the staples and "forward linkages" that could provide for further processing. Moreover, additional jobs were thereby provided (including to the immigrant population), and this in turn expanded the consumer goods industries that followed in the wake of these linkages. Canada (with some qualifications) could be held up as an example of how these linkages could work to foster industrial growth at least for some staple-reliant countries.

But little of this would have actually occurred in a laissez-faire society, where industrial imports from an adjacent economy might have swamped the fledgling domestic industries responding to the demand for the products of these backward and forward linkages. These new industries were sheltered in Canada behind a tariff wall. Local manufacturers did seize the opportunities on their doorstep and created an industrial base for the country. (We will have to bypass here the later debate on "efficiency" and supposedly suboptimal growth through import substitution.) In the postwar period, as Watkins pointed out, Canadian business was often slow on the uptake, and alas foreign owners garnered many of these industrial opportunities.

Other staples-oriented theories followed in a similar vein, although they were not necessarily offshoots of Watkins' original article. Eric Kierans directed attention to the question of capturing the 'rents' connected with natural resources. Charles Kindelberger had earlier addressed the different effects of staple exports on the balance of trade and on the growth of the domestic economy. Albert Hirschman pointed to the fiscal consequences of staple production, and this was followed by the diagnosis of "Dutch disease" (analyzing the effect on the exchange rate and hence on manufacturing in major staples exporting countries.)

Environmental consequences as well began to loom large in the discussion of staples. These were often devastating: the clear-cutting of forests, the pollution of the atmosphere, and (more recently) the moonscapes of the bitumen fields.

Today, tracking the broad consequences — economic, financial, political and environmental — that flow from a reliance on staples production still follows the broad Innisian tradition, although in a more critical vein. Further, the challenge of finding a national balance between staples and manufacturing remains a perennial theme of debate.

Innis was right many decades ago to place staples in the forefront of the discussion of Canadian economic history. He thereby provided an antidote to the dominance of the sycophantic and the romantic in Canadian history. Instead, he grounded that history in an analysis of staples that had been "hidden in plain sight." The ramifications of staples production were spread far and wide, linking not only the economy but shaping the society as well. This is what Innis discovered, and thereby found a way to remove the blinkers of neo-classical economics through his staples thesis.

Watkins' renewal of this discussion fifty years ago was an antidote of a different sort. He pointed out some active directions for policy makers to pursue in staples production. In this case it was an antidote to the conventional approach to managing staples with "invisible hands." These hands had in fact become so "invisible" that they were in danger of rendering Canada a paraplegic.

This challenge is still clearly with us today, evidenced both by the reluctance of Canadian business leaders to develop value-added industries here, and the lack of imagination of policy-makers to push them to do better. In this regard, we give Watkins (1963) the last word:

> "...Economic institutions and political values, an inefficient structure of industry combined with an unwillingness to do anything about it, have in the past prevented Canada from growing at a satisfactory rate in the absence of a strong lead from primary exports, but this need not be true in the indefinite future."

Mel Watkins as Teacher, Scholar and Activist

Hugh Grant and David Wolfe

FOR ANYONE FIRST exposed to Canadian political economy in the 1960s and 1970s, Mel Watkins was an iconic figure. Through his strong association with the Watkins Report, commissioned by Liberal cabinet minister, Walter Gordon, in the mid-1960s, and his critical role in the drafting of the Waffle Manifesto in 1969 (documented in Dave Godfrey's *Gordon to Watkins to You*), he gained instant recognition among a generation of students and activists deeply concerned with the growing degree of foreign control over the Canadian economy and the inadequate response to the issue by the mainstream political parties of the day. Through his subsequent involvement with the Berger Commission in the 1970s and his passionate opposition to the Free Trade Agreement and the NAFTA in the 1980s and 1990s, political activism was, and remains, a central part of Mel's contribution to Canadian society and politics.

Along with his continuing engagement in Canadian political life, Mel was always an active scholar, born in the Innis tradition of Canadian political economy, and shaped by the work of a contemporary generation of economic historians and political economists, including Kari Levitt, Jim Laxer, Tom Naylor and Wallace Clement. Through his many contributions to magazine columns, government reports and books and scholarly journals,

Mel profoundly influenced the intellectual development of Canadian political economy over the course of more than four decades. The scope of his work ranged from theoretical writings on the staple thesis; analysis of foreign investment, the multinational corporation and international trade; observations on the state of Canadian economics and political economy; commentaries on a range of political issues; and reflections on technology. The themes addressed and the arguments made continue to resonate and offer important insights into the nature of Canadian political economy today.

His contribution to Canadian political economy is, or will be, apparent to those who have an opportunity to read his work. Less well known, except to those who had the good fortune to enrol in one of his courses, is his influence as a teacher and mentor to undergraduate and graduate students at the University of Toronto.

Our association with Mel dates from the early 1970s at a time when the Department of Political Economy was a rarefied, if not rather strange, place. In the politically-charged atmosphere of the Vietnam War period, it was not unusual for incoming undergraduates to be familiar with the Waffle Movement, the Committee for an Independent Canada and the findings of the Watkins and Gray Reports on foreign ownership, or to read regularly *Canadian Dimension* and *The Canadian Forum*. Eager first-year students in search of their lecture hall in Sidney Smith Hall ran the gamut of newspaper sellers from a wide range of political parties and factions of the day. Most of the writings of Marx, Lenin, Mao and Tim Buck were available for purchase. Rare times indeed.

Once acclimatized to the University of Toronto, it was possible to find a number of courses scattered through various academic departments that dealt with the issues pertaining to the New Left. This was less true in the Department of Economics; however, Ian Parker was a source of inspiration and two faculty members had definite name recognition: Abraham Rotstein and Mel Watkins.

Despite the presence of Parker, Rotstein, Watkins and others, pursuing an alternative program of study in Economics grew more difficult as the neoclassical orthodoxy extended its grip on the former home of Innis and Easterbrook and the Keynesian consensus crumbled. The *Political Economy Course Critique* for 1973/74, published by the students' association, observed that "Numerous students emphasized the need for courses on the exploitation of multi-national corporations or on Marxist economic theory." Lest students' criticisms be shrugged off by faculty and administrators, they were accompanied by a warning: "We, the editors, sincerely hope that this course cri-

tique will aid in pinpointing some of the inadequacies in each individual course. This, however, is not enough. Words must be followed by action."

In a curious act of pluralism, or perhaps product differentiation, the Department responded by creating two versions of a course on Canadian Economic Issues, one taught by Ed Safarian and the other, not recommended for Commerce students, by Mel Watkins. Presumably designed to assuage the small band of dissident students, the Department was doubtless surprised when the latter was consistently over-subscribed and was the overwhelming choice of Commerce majors seeking to complete their Economics requirement. The *Course Critique* for "Eco 337: Contemporary Issues in the Canadian Economy" reported that: "Professor Watkins' course is one of the few, if not the only economics course to follow the Marxist viewpoint of economics. Watkins is, in addition, not afraid to point out the shortcomings of the Keynesian school of economics." Despite this blessing, he did not escape criticism, "because he spoke for practically the entire two hours each lecture." When Mel was seconded to work for the Dene during the Berger Inquiry, the course's popularity forced the Department to arrange a last minute replacement. The best it could come up with was the equally witty and urbane, yet less renowned academic from the Hautes Études Commerciales, Jacques Parizeau.

As the opportunity to study political economy within the Department of Economics slowly disintegrated, Mel took refuge in the undergraduate Canadian Studies program at University College and in teaching a graduate course in Canadian Political Economy with colleagues David Wolfe and Stephen Clarkson in Political Science, and distanced himself, both physically and intellectually, from his colleagues in Economics. Just the same, his courses — whether offered in Economics, Political Science or Canadian Studies — became a rite of passage for those concerned with political economy, drawing students from every discipline and interdisciplinary program. One observation was unavoidable for his students. Political Economy could be a strongly-grounded theoretical discipline while commenting on the immediate issues of the day. The former required an acute awareness of the intuition, or vision, that informed the theoretical model, while the latter demanded a personal engagement in the current issues.

For his part, Mel was never far removed from the important political issues of the day, be it through his principal authorship of the Watkins' Report on Foreign Ownership, his involvement in party politics (from the Waffle Group to his candidacy in two Federal Elections under the NDP banner in the Woodbine riding), as an advisor to the Dene Nation during the Berger

Commission hearings, as an anti-free trade advocate for the Canadian Labour Congress during the FTA debates, as a columnist and contributing editor at *This Magazine*, and through his work for Science for Peace. Yet throughout these various activities, Mel could almost always be found in his office and the lecture halls at University College, University of Toronto where he providing a guiding hand to the intellectual development of successive generations of students until his retirement in the 1990s.

Throughout this period, he continued an active program of scholarship, contributing new papers to academic conferences, participating in several versions of edited collections on the development of Canadian political economy and to academic journals. As scholarly trends evolved over the course of these decades and the dominant academic issues of the day changed, Mel remained firmly committed to two critical values: the seminal contribution of the Innis tradition for an understanding of the development of the Canadian economy, society and the polity; and the need to analyse the factors contributing to, and the political implications of, a growing loss of Canadian sovereignty. His intellectual contribution to understanding these issues remains as critical today as when he first started writing about them in the 1960s. It is our fervent hope that this collection will expose his work to a new generation of students and scholars for whom these issues are as pressing today as they were when Mel joined his first anti-war teach-in at the University of Toronto.

Based on material originally published in Hugh Grant and David Wolfe (eds.), Staples and Beyond: Selected Writings of Mel Watkins *(Montreal: McGill-Queens University Press, 2006).*

Who's Your (Grand) Daddy? Watkins, Innis, and W.A. Mackintosh

Hugh Grant

EVERYTHING I KNOW I learned from Mel Watkins and Abraham Rotstein, so this is a very personal commentary. (It is also a convenient starting point, because if I am wrong about any of what follows, I can simply deflect criticism by blaming Mel and Abe for teaching me incorrectly.) If I view Mel as my intellectual parent, in tracing my intellectual lineage I think I've been lied to for years: my grandfather isn't Harold Innis, but W.A. Mackintosh.

Mackintosh, Innis, and the Staple Thesis

Mackintosh began teaching economics at Queen's in 1920 and served as its Principal in the 1950s. He engaged energetically in Canadian policy debates, serving on the National Employment Commission (1936–38), the Rowell-Sirois Royal Commission (1937–39), as an advisor to the Minister of Finance during World War II, and later on the Royal Commission on Banking and Finance (1961–64) and as a Director of the Bank of Canada. Indicative of his contribution to wartime policy, it was Mackintosh who, at the

Bretton Woods Conference, seconded Keynes' motion that led eventually to the establishment of the International Monetary Fund and the World Bank.

He was also a prolific scholar and arguably the "discoverer" of the staple thesis. Its origin can be traced to Mackintosh's talk delivered at the National Archives in 1922, a talk that formed the basis for his seminal 1923 paper on "Economic Factors in Canadian History." Innis was in the audience and was quick to recognize the importance of Mackintosh's argument; indeed, Innis would seize upon many ramifications that Mackintosh later admitted he himself had not fully appreciated.

By 1934, the two men had completed their major studies of specific Canadian staple industries: Innis on the fur trade and cod fisheries, and Mackintosh on wheat. The enthusiasm each expressed for the other's work reflects a common desire to understand the broad patterns to Canadian economic history. Mackintosh hailed Innis's *The Fur Trade in Canada* (1928) as "the greatest single contribution that has been made to the interpretation of the economic history of this country" and "a great book in economic history." In his reading, a key aspect of the *Fur Trade* was Innis's recognition of the vulnerability of a staple economy: "a perpetual Canadian economic problem of great significance, that of carrying heavy overhead costs and with variable income and with relatively unproductive seasonal periods."

Innis, in turn, was quick to appreciate Mackintosh's extension of this theme to the analysis of the prairie wheat economy. In a lengthy review of Mackintosh's contribution to the *Frontiers of Settlement* series, Innis states that

> It is impossible even in an extended review to convey an appreciation of the significance of the work carried out under the project represented by the volumes under review. The ... work provides a fundamental basis to the problems of Canada as a whole. Throughout the volumes the problem of the adjustment of burdens between established and fringe areas has been of vital concern and emphasis has been placed on methods by which the burdens may be kept under control and reduced. But in many ways Western Canada is to the industrial center of Canada what the fringe is to the center within the western provinces, and a provincial regional problem becomes a Canadian problem. These volumes constitute a first preliminary attack on the difficulties of provincial-federal relations, and their importance is enhanced by the opportune date of the study and their appearance in the years of the depression. No economist or historian or geographer can continue to write intelligibly about diminishing returns, the frontier theory, and other related concepts without a through appreciation of their implications."

At the 1935 meetings of the Canadian Political Science Association, Mackintosh presented "Some Aspects of a Pioneer Economy," in which he made the first attempt to generalize the findings on specific staple industries into a more comprehensive framework for understanding the development of Canada and "new countries" in general. "It is, then, in the history of new countries that the economics of development can best be studied," he wrote. "I suggest that the fully operating open economic system is best exemplified in new, pioneer countries."

Four basic features of the pioneer economy are identified. First, countries characterized by plentiful resources need to find a staple product that was both "adapted to the basic geographical facts" and in demand in metropolitan markets. Second, the scarcity of labour and capital necessitated an inflow of labour, use of the "industrial arts of mature economies" (or "mature techniques" to use Innis' term), and capital borrowing. The latter implied a high rate of investment and indebtedness, and a high propensity to save if the interest payments on debt were to be met. Third, the nature of the production function, or the technological and institutional conditions under which the staple commodity is produced, had broader implications not only for the economy as a whole, but political and social institutions as well. Fourth, the conflict between highly-variable income from staple exports and heavy overhead costs left the economy vulnerable to wide fluctuations in the rate of economic growth. The staples economy thus faced periodic tests of the capacity of export earnings to carry the growing debt charges and to pay for imports.

The concentration on a single staple product had cumulative effects which influenced the capacity to transformation from an immature to mature economy. During periods of growth, factor prices tend to adjust as the inflow of relatively scare labour and capital drive down wages and interest rates respectively, and increase the price of land. "Rising prices and falling interest rates are the attendants of pioneer prosperity." When the inflow of capital eventually declines, there must be sufficient export earnings to fund imported consumer goods and establish the basis for domestic capital accumulation, particularly in secondary industries to help spread out the social overhead costs. Only then can the economy "pass from the pseudo-prosperity of the settlement boom to the genuine prosperity of a fully functioning economy."

This paper would serve as the starting point for Mackintosh's definitive statement of the staple thesis applied to Canadian history: *The Economic Background of Dominion-Provincial Relations*, written in 1938. When asked

to comment on the draft of the manuscript, Innis declined on the grounds that it would be "merely gilding the lily."

Mackintosh and Keynes

Innis and Mackintosh would increasingly part company over the course of the latter 1930s. For Innis, the basis for knowledge was fragile and the search for bias was an essential step to gaining self-knowledge; as he cited James Ten-Broeke, his professor in Philosophy from his undergraduate days at McMaster, "Why do we attend to the things to which we attend?" Questioning the basis for one's own convictions was, if not the route to detached objectivity, at least the grounds for obtaining a perspective on the subject. It did not, however, provide a reliable basis upon which to offer expert policy advice. His scathing review of the Rowell-Sirois Royal Commission in 1939 — whose *Final Report* Mackintosh had a large hand in drafting — underscores Innis' increasing isolation from the majority of his fellow economists.

Mackintosh was no less introspective despite consistently expressing a matter-of-fact approach to intellectual inquiry and the capacity to apply "common sense" to a body of accumulated facts. He subscribed to no simple inductive method; rather, "It is that wealth of knowledge which tempers logic with intuition and enables the competent economist to judge the quality of imprecise facts, to exercise what we may call his economic sense." He acknowledged that "as an individual of experience he will doubtless have strong prejudices and inherited tastes," but that scientific detachment was possible. "Men must have a philosophy of some kind no matter how poor or contradictory a thing it is, but it is essential that we keep our philosophy separate from our scientific thinking, or rather that our philosophy should always be ready to retreat before science."

In Mackintosh's Presidential Address to the CPSA, the methodological gulf between the two men is quite apparent. In responding to Underhill's charge that economists were the "garage mechanics of capitalism," Mackintosh acknowledged that, "In all quarters one gathers the impression that the general public is disappointed in economists, is distrustful of them, is unimpressed with the complexity of the subject, or considers them out-moded and outworn receptacles of a bourgeois ideology, the product of a particular historical epoch." But he defended the economist's role as a policy expert as long as one resisted the pressure to "abandon his scientific method and become a propagandist."

In this respect Mackintosh endorsed Keynes' view which he described as the trusting of a technical man to do a technical job according to good

professional standards. "Just as engineering principles do not lay down the form and structure of a bridge apart from the particular facts of span, weight, strength of materials, etc., so economics enunciates no policy apart from the particular facts of the problem." Thus as Innis lamented the growing division within the social sciences, Mackintosh championed the scientific foundation of economics with the proviso that "the economist must remember that he is an expert in but *one* of the social sciences." He was equally adamant that "Any social science must ultimately be justified by the basis which it affords for policy ... Unless economics and other social sciences are to be justified by policy they become mere chess games, to be classed as recreation, wholesome recreation if you will."

Accordingly, it was Mackintosh who came to embrace Keynesianism during his work for the Canadian Government during World War II. In authoring the *White Paper on Employment and Income* in 1945, he articulated a Keynesian vision of the Canadian economy in the post-war period. In doing so, Mackintosh made a seminal contribution in crafting a Keynesian model amenable to a small open economy regulated by a federal state. The *White Paper* can be interpreted as an effort to restate the staple thesis within a Keynesian aggregate demand framework.

From Mackintosh to Watkins to You

I will leave it to others to discuss specific aspects of Mel's 1963 paper, but I encourage all to read or reread it as an extension of Mackintosh's wedding of the staple thesis with a Keynesian model. Moreover, when it comes to addressing immediate policy concerns, Mel's lifelong engagement and activism actually stand in sharp contrast to Innis' reticence — and bears a much greater affinity to Mackintosh's active policy commitments.

Watkins, Innis, and Canadian Economics

Duncan Cameron

WHEN ECONOMIC HISTORIAN and theorist Harold Adams Innis died in 1952 at the age of 58, Prime Minister Louis St. Laurent sent his wife Mary a telegram.

While Innis was not a public figure, he was widely respected for his academic work on the cod fishery, the fur trade, rail transport, and communications. And Innisian ideas about how Canada developed as a country were influential in universities, and in wider discussions of public affairs.

Mel Watkins was a student of Innis, and remains engaged with his work today. Interestingly, at MIT, Mel also studied under Paul A. Samuelson: another economic sciences giant, though of another theoretical persuasion altogether.

With Samuelson, Mel co-authored the Fourth Edition of the Instructors Guide to the legendary introductory textbook by Samuelson (entitled simply *Economics*) that cemented the link between mathematical representations of the economy, and contemporary economics.

Economics was first published in 1948, went through 19 editions, was translated into 41 languages, and sold over 4 million copies. Through the Samuelson text, what he called the Neo-Classical approach to economics became the dominant framework of economic analysis in the U.S, and much of the world.

Though primarily an economic historian, Watkins always retained a focus on the issues of his times, and he still does today. The 1960s were the declared the "Development Decade" by the United Nations. Watkins was the first recipient of an MIT doctoral fellowship in development economics (Jagdish Bhagwati was the second). Canadian economic development was a public issue to be addressed.

Reading the 1963 article justly celebrated in this collection suggests that in his approach to economics, Watkins leaned more to Innis, than Samuelson. However, the article is about a staples "model" of economic development, and like the Samuelson textbook, it has Keynesian bones.

Much more than a discursive history of the staples, Watkins put together the useful ideas of Albert O. Hirschman about forward, backward and final demand linkages with the Innisian focus on staples production, and offered a valuable theoretical perspective on Canadian economics. The article offers a model, but not a mathematical model. It is a work of theory, but the theory is broader than neo-classical economics as generally presented.

As a historian, Watkins was looking for ways to describe and explain how the Canadian economy evolved. Could there be laws of motion connecting staples production and the Canadian economy? Could Innisian thought provide them?

Though it has been argued there is a staples approach, but not a staples theory, it is quite appropriate to point to a staples theory in the work of Innis. In the Canadian economy, Innis argued, abundant natural resources attracted capital and labour in quantity because of the opportunity for good profit margins. Capital and labour remained engaged in staples production, even without adopting technological changes, because there was insufficient profit incentive to leave. This also meant there was little incentive to update production techniques.

So long as profit margins were higher in a staple than elsewhere (say manufacturing) the less profitable sectors had difficulty attracting capital and labour. But the staples sector was vulnerable to a market collapse, with dire consequences for the society developed around its previous high returns on investment. This was the dreaded "staples trap."

The seminal contribution of Watkins to staples economics was to show that staples could be linked backward (through technological improvements say) or forward (by transforming the staple into a manufactured product), but that this required government policy, and a commitment to Canadian economic development. Ultimately it required political action by a government.

Watkins' study pointed to a conclusion: those who want to see changes in public policy have to recognize the role of political parties: they form governments, or pressure governments from inside parliament. Watkins worked with both Walter Gordon and the Liberal party, and then, twice, jumped into NDP politics (along with his Waffle colleagues he was expelled after his first venture). When Watkins entered the second time (he supported the leadership bid of Audrey McLaughlin) it was for the long haul, including two runs at elected office alongside Jack Layton, who Watkins had promoted for the NDP leadership.

On politics Innis and Watkins traveled different paths. Though he had advised government, fought for his country in World War I, and believed scholars should focus on public problems, Harold Innis soured on partisan debate, and became aloof from party politics.

Not fearful of controversy, Innis risked his standing in the University to defend historian and CCF activist Frank Underhill from a socialist witch hunt by some members of the Board of Governors at U of T. However, Innis believed academic research, though publicly spirited, should be kept separate from public engagement.

Where Watkins joined with Innis and extended his intellectual project, was around Innis' assumption that Canada needed to be studied with a scholarly apparatus appropriate to the Canadian context. Simply taking economic models developed in Britain or the U.S. and applying them to Canada was not good enough.

Though both Innis and Watkins were surely right about this, their invitation to study Canada as if the country mattered more than the dominant methodology has been widely ignored in Canadian university departments of economics.

Watkins, along with Abraham Rotstein and Stephen Clarkson, all colleagues (in the once proudly named Political Economy Department) at the University of Toronto, made the Innisian assumption their own, and they were joined by others across Canada, primarily scholarly activists of the left.

Innis had a wide range of intellectual interests, and his reputation spread beyond political economy, largely owing to University of Toronto English scholar Marshall McLuhan who widely proclaimed his debt to Innis, and whose communications writings became world famous.

Innis the economic historian was, as it were, "rescued" by departments of Communication, Sociology, Geography, History, and Political Science. The inattention given economic thought, and history, by Neo-Classical economics meant Innis as economist was relatively ignored.

Along with W.A. McIntonish, Irene Spry, Mable Timlin, and others, Harold Innis is considered the precursor of the Canadian political economy approach, practiced today by independently minded academics, and the inspiration for much of the policy research done by the Canadian Centre for Policy Alternatives, trade unions, NGOs, social agencies, and left scholars and activists with a policy bent. Along with Mel Watkins, the late Stephen Hymer and Kari Levitt featured prominently in debates around foreign ownership (not investment) in Canada that animated the New Canadian Political Economy practiced by R.T. Naylor, Daniel Drache, James Laxer, and Wallace Clement. These debates widened and deepened in the scholarly journal *Studies in Political Economy*, incubated at Carleton University by Leo Panitch, Rianne Mahon, and others, that attracted scholars across Canada, and remains a lively outlet for research today.

Knowledge of Innis helps in seeing what is glaringly wrong with Canadian economic policy, particularly in the dark decades since the 1981–82 recession. Despite the efforts deployed by the 1985 Macdonald Royal Commission to claim Innis as a proponent for trade enhancement, the presumption that the export trade is somehow the source of Canadian prosperity, and that export promotion (mercantilism) is what is needed to assure Canada's economic future, is hardly what Innis, Watkins or Canadian political economy is about.

What separates Innis from everyday social science is not just that he brilliantly studied staples in a succession of scholarly volumes. Innis showed that what he called staples production was what shaped Canadian society; production techniques and associated technology were all-pervasive in the pattern of human settlement of the country, and its social fabric. Canadians became what Canada produced, as it were. Innis entitled his 1938 presidential address to the Canadian Political Science Association "The Penetrative Powers of the Price System."

The conclusions Innis reached are what make his work so important. At the heart of his Canadian political economy is the proposition that the export of staple products creates uncertainty, and havoc when markets turn against Canadian products. The work of Innis helped to understand how when the world economy collapsed, producing the great depression, it took the Canadian wheat-based economy with it.

The staples story is a cautionary tale Canadians ignore at their peril. As presented by Mel Watkins, the staples model of economic development remains central to understanding questions of public policy in Canada, from resource development to industrial policy, from transport to monetary, fiscal and social policy, and beyond to links with the continental and global economies.

Part 2: Global Influence

Staples Theory on the International Stage

Gerry Helleiner

STAPLE THEORY IS a Canadian invention. The original writings of Harold Innis were sparked by Canadian economic history. Mel Watkins' classic article, while making a more general case, appeared in the *Canadian Journal of Economics and Political Science*. Indeed, most subsequent discussion and debate of staple theory seem, at least to most Canadian analysts, to have taken place in Canada. Yet there is a much broader and more international story to be told about the development and influence of staple theory.

The developmental significance of the "choice" of different kinds of export activities has long itself been a "staple" of development debate in Latin America, the Caribbean, Africa and even parts of Asia. Sometimes Watkins was footnoted in the relevant writings, sometimes not. (To my knowledge Innis never was.) How strands of knowledge or analytical approaches are transmitted is complex and often unclear; I leave this to the historians of economic thought and sociologists of knowledge. But what is indisputable is that Watkins' way of thinking about these issues clearly had impact, whether direct or indirect, in the developing world over the past 50 years.

There is a rich tradition, for instance, among Caribbean economists (not least our own Kari Polanyi-Levitt) emphasizing the peculiar, and developmentally detrimental, legacy of plantation-based export economies.

It features the influences of such matters as distorted infrastructure, limited backward or forward linkages, and, of course, the distribution of income from these export activities. There are parallel concerns and a parallel literature concerning plantation, estate or large-scale export-oriented agriculture and forestry (such as bananas, pineapples, palm oil, timber, etc.) in many other parts of the developing world. Not infrequently these issues are accompanied by debates about the accompanying role of foreign direct investment, a matter on which Watkins also, of course, had a great deal to say. Most recently it is foreign (Chinese, Arab, and other)"land grabbing" in ostensibly "independent" sub-Saharan African countries that has captured the popular spotlight. The concerns raised by this trend are thoroughly Watkinsian.

Comparable Watkins-style analyses have long surrounded the issue of (usually foreign-owned) mining and petroleum export activity in poor countries. What kind of infrastructure do such activities require, and do they assist further development? Are there any significant domestic linkages? Where does the income go? Some of these critical questions have at times been drowned out by popular discussions of the "resource curse" — overvalued currencies (Dutch disease), corruption, and overblown governmental spending of the (often lavish) revenues. After the recent boom in international mineral and other commodity prices, with its resulting rapid growth rates in poor commodity-dependent economies, there has been renewed attention to the longer-term development question of what, if anything, these "successes" leave behind after the boom has abated. In many current policy discussions in poor countries, the staple theory's principles are therefore very much in the limelight once again.

In many parts of the developing world, a version of staple theory has also been deployed to analyse the relatively positive developmental implications of smallholder (peasant) agriculture geared at least partially for export: for example, with Tanzanian coffee or Ghanaian cocoa. I know this with particular certainty because I have written extensively on these topics myself…and I know where I got these ideas.

In later years these same analytical tools have been employed to acquire a better understanding of the benefits and possible costs of labour-intensive manufacturing for export, as in Bangladesh, and export processing zones in a wide range of other poor countries. Significant labour income (largely to female workers) accrues from these activities; but often, quite apart from the lax fire, safety and other labour standards, precious little else is done to further sustainable longer-term development.

These staple theory approaches not only describe the likely developmental consequences, positive or negative, of alternative export "choices" (where choices exist); but they also provide guidance as to policies that might begin to overcome the deficiencies inherent in some of them. Staple theory is not and never should have been seen simply as an approach to economic history. By now it should be evident, too, that its applications go far beyond the cases of Canadian cod fisheries, fur trade and wheat. The insights of staple theory, both historical and policy-oriented, belong to the world. That is why, during my more than thirty years teaching a graduate course on "International Aspects of Development" at the University of Toronto, Mel's article on the staple theory was always compulsory reading.

The Staples Trap in Developing Countries

Alberto Daniel Gago

IN 1980 I first encountered the work of Mel Watkins, while I was completing my Master's thesis on the theory of regional export base, applied to the Cuyo region of Argentina, at the Institute of Social Studies in the Netherlands. Indeed, Mel's classic paper, "A Staple Theory of Economic Growth," has been very influential in the whole Latin American school of economic development theory.

Watkins' approach allowed us to leave aside the neoclassical theory of export base, brought more complexity to the analysis of staples-driven growth, and highlighted the range and contingency of possible outcomes to the development process. He coined the term "staples trap" to refer to the inability of a resource-based economy to mature into a diverse and industrialized one. Overspecialization in export-oriented staples implies dependence on foreign direct investment, while underpriveleging domestic manufacturing and economic diversification.

In regions with resource-intensive production, economic growth is strongly concentrated on staples, produced for export to more highly developed regions. This supposedly paves the way for broader economic growth, and implies a resource-intensive strategy for national and regional development based on external markets. However, this optimistic story is incomplete.

In countries open to global markets, staples industries produce deep structural economic, political, social and cultural changes:

- In a global era, staples industries typically rely on multinational corporations, that appropriate profit through their direct investments in staples projects. Transnational corporations control the overall staple trajectory, giving them a leadership role in the overall economic and political dynamic that does not necessarily serve the broader interests of the host economy well.
- These large global corporations also tend to absorb and exclude small and medium firms from the formal production system. The multinational corporations, from their dominant position, transform the regional production system into oligopolies, ultimately controlling the natural resources and capturing the resulting economic surplus.
- Peripheral capitalist regions dependent on staples fail to develop into full-fledged industrialized economies; these countries can be caught in a circle of economic re-primarization and de-industrialization.
- Instead of promoting broader economic diversification, multinational corporations strengthen only a few specialized productive branches and activities within the peripheral capitalist regions.
- The resulting concentration and centralization of economic power produces a dialectical process of economic, social, political and cultural fragmentation — and in the long term leads to instability.

In this sense, Mel's "Staple Theory" helped us to understand the implications and limitations of staples-led development, and spurred an intellectual focus on the "staple trap" and its causes. Topics for this inquiry included better understanding the forward and backward linkages to staples industries, the relationship between staples and broader domestic development, the role and influence of the new elites and investment groups, the impact of staples-dependence on overall modernization, and the underlying conditions (values, institutions, and public policies) necessary for staples-led growth.

In Argentina, for instance, the latest international structural adjustments provoked deep changes in the national and regional economies. These developments spurred us to analyze the recent processes of economic and social development in the Cuyo region (in the western part of Argentina). Structural transformations have been imposed by the internationalization of production, markets and capital, helped by national policies which reinforced the dominance of international corporations.

It is necessary to understand how developing regions are incorporated into the new trajectory of the global economy. New questions for inquiry arise, including: Where and how are new organizations are shaped? How does overspecialization work, and how are its consequences manifested? Who are the dominant actors in the global staple exports chain, and how is their influence experienced in particular staples-producing regions?

The behavior of staples, and specifically the "staple trap," inherently directs this analysis away from the neoclassical approach. For this reason, staples theorists in the south have also incorporated the main themes of the French Regulation school, in order to better comprehend the staples-driven economic growth process. Three of these complementary regulationist themes are: modernization, accumulation and regulation.

1. **Modernization** suggests that the staples-led development process is reliant on technological innovation imported from leading developed countries. In fact, the large corporations that control the staple economy benefit most from modernization, since they are able to arrange their export goods production on the basis of the advanced technology they apply to staple and complementary industries. Through capital accumulation and their access to the economic and information networks, they come to dominate world staple markets.

2. The **accumulation** process in staples industries reveals how hegemonic and dominant groups base their power on unequal social relations of production, income distribution, and surplus concentration. The interrelation among fractions of capital varies according to the regime of accumulation. The regime of accumulation refers to the way the dominant economic forces operate within a given mode of production, including their trade strategies, their pattern of capital investment, and their processes of production. Accumulation is controlled by great firms which manipulate the production process and exert the dominance of staples over the main economic branches. The accumulation process reflects, in turn, several more key considerations:

   - The generation of surplus at the moment of production (through inputs of labor and capital);

   - The relationships between production, distribution and consumption, shaped by social relations that permit the realization and subsequent recycling of the social surplus; and

- The ultimate utilization of social surplus, which can take different modalities according to the regime of accumulation and the mode of governmental regulation.

  Through these channels, the overall dynamic of accumulation fundamentally reflects the staple-export chain. In short, the entire modes of regulation and accumulation are organized around staple industries. Obviously, this organization depends on the historical moment, on the kind of technological innovation imposed on the export economic branches, and on the economic agents leading this process.

3. Finally, is important to understand the role of **regulation** and the state in shaping the overall staple development process. According to the staple thesis, state actions tend to follow from their overall priority on facilitating the staple trade. These actions include provision of transportation infrastructure for the export of the staple; underwriting monetary obligations through the availability of credit guarantees and liquidity; and, as export demand shifts, aiding adjustment from declining to rising staple sectors. These actions highlight the conscious decisions of state and business elites to permit the internationalization of capital and the resulting staples-dependence. Political life is thus deeply influenced by staple exports, because economic wealth and political power are so concentrated in business and political elites (who are often the same people). In this way, the state synthesizes power relations through laws, decrees and regulations, in an attempt to adapt the behavior of social agents, given the staples orientation of the domestic economy, to changes in the international economy.

The Global Staple Chain: Production, Firms, and Capital

Production and accumulation circuits are also influenced by national macro policies and international trade. At the same time, it is important to recognize the exchange relations between the sub-national, national, and international spaces — in terms of both production processes and capital accumulation. To understand the contradictions and political struggles that entail, the analysis must explain the ways in which agents alter or preserve their positions within staple sectors, and then extend that power across regional, national and international spaces.

By emphasizing staples activities related to natural resources (such as agriculture, agro-industry, mining and petroleum), accumulation is controlled by large firms that articulate their influence into many different sectors (including resources, industry, and finance). This leads to the devaluation of other segments of capital, negatively affected by the dominance of the global staples chain, producing social costs, obsolescence, and massive unemployment.

In developing regions like Cuyo, a process of concentration and centralization of foreign capital occurs among economic branches. Multinational corporations control the distribution and commercialization phases of the staple industry (both national and international).

The staple theory was constructed on a systematic account of staples exploitation, transportation, and market demands. But it is also necessary to emphasize the distribution of social surplus among firms and among classes, and the resulting distribution of power, to explain the overall trajectory of economic growth. Obviously, it is necessary to link staples firms with banks and other economic branches.

Government is essential to the coordination of transnational production systems, in terms of managing the overall mode of regulation, and promoting the location of large transnational corporations which play the central role in staples production. The main functions of global enterprises are to facilitate a transition from producer-driven to buyer-driven supply chains. But these firms also relate among themselves, belong to the same lobby groups, and promote similar interests. The regional export and natural resource bases are thus appropriated by national and international holdings. This partly explains the presence of foreign capital in agriculture, agro-industry, mining and petroleum. This process of globalization is further accelerated by state reforms and deregulation.

This panorama is completed with the shift of other agents as consequence of the lack of capital valuation within their own firms and sectors. Small-scale firms are at a disadvantage, caught in a vicious circle: they cannot attract innovative managers, invest in the modernization of plant and equipment, or implement new technological advances. Then they are relegated to a battle for survival in the informal sector, facing continuously deteriorating conditions of unemployment and marginal self-employment.

Modernity is represented by so called “bubbles of wealth,” expensive new residences and facilities built to keep ordinary people away and avoid social conflict—such as the increasing prevalence of condominiums and

private residential neighborhoods highly controlled by security apparatus. At the opposite end of the spectrum is the withdrawal of producers and workers from the rural to the urban areas, and the ever-present unemployed workforce — so-called "bubbles of poverty."

To sum up, the globalization modernization process provokes increasing inequality and social polarization. Without changes in public policies aimed at improving the distribution of social and economic resources, social conflict remains a permanent feature of the staples-dependent developing economy.

Research we are currently conducting at the National University in Argentina further develops the analysis of staples industries and resource-intensive development in peripheral capitalistic regions. We pay close attention to the processes observed in recent decades following structural adjustment and globalization. Our key findings include:

- Staples industries generally failed to branch into mature manufacturing because they became caught in a "staples trap," resulting mostly from the dominance of large foreign capital.
- Technologically, staples industries are led by large international firms, which own and develop the technology.
- Developing countries and regions are attempting to complete the transition to industrial capitalism, at a time when the strongest sections of world capitalism are themselves undergoing intensive concentration and centralization. This makes the transition all the more challenging.
- Profound instability results when the staple growth model changes due to external causes.
- Public policies, values and institutions reinforce economic concentration in the wake of the shifting conditions of internationalization.

Social and economic development as a result of the internationalization of staples production, and the success of export activities and competitive specialization in staples, foster an apparent modernization of the peripheral regions, in line with the shifting conditions of imperial relations. This is a turning point, which helps to explain the dynamics of capital accumulation, the consolidation of the agents' positions in the global supply chain, the growth of some economic branches (but the shrinkage of others), and the role of the state. This is a dialectical process in which both the product-

ive forces and social relations represent the conflicted integration process of the overall system.

While 50 years have passed since Mel's seminal paper, his pioneering analysis of the "staple trap" has kept its value in the development studies literature. It helps us understand the overall matrix of resource-intensive export production, and its impacts on production, accumulation, and policy—outcomes that are still strongly visible in many developing countries, including Argentina.

Part 3: Staple Theory and the Bitumen Boom

Staple Theory and the New Staple Boom

Thomas Gunton

FIFTY YEARS AGO, Mel Watkins provided a brilliant articulation of staple theory that was instrumental in stimulating a productive staple tradition in both Canadian and international literature over the last half century. This is indeed fortunate because there is little doubt that the staple tradition remains as relevant to Canada today as it was 50 years ago.

Canada is currently embarking on one of the largest staple-based economic expansions in its history: including the rapid expansion of bitumen production in Alberta, and the planned development of liquefied natural gas (LNG) exports from BC. The magnitude of this expansion is dramatic. Oil production is forecast to more than double from 2010 to 2020 (Millington *et al.* 2012), and BC is contemplating at least five new LNG facilities involving $98 billion in investment and a three-fold increase in natural gas production by 2020 (Ernst and Young 2013).

The environmental implications are also staggering. Greenhouse gas emissions resulting from oil expansion will increase three-fold, from 45 Mt/year in to 155 Mt/year by 2030 (Millington *et al.* 2012), while other emissions will negatively impact air, land, and water (Joseph *et al.* 2013; Grant *et al.* 2013). Data from Environment Canada show that without oil sands expansion, Canadian greenhouse gas emissions would actually decline by 5.1%

between 2005 and 2020 (Environment Canada 2013, p.21). Cost-benefit analysis of oil sands development shows that when environmental impacts are included, oil sands development is a net cost to society (Joseph *et al.* 2013).

Given the magnitude of the expansion and its impacts, it is important that Canadians have a comprehensive understanding of this development. Unfortunately, most of the analysis to date lacks a political economy perspective. Publications from the oil and gas sector focus on the alleged economic benefits and the need to remove "barriers" to expansion (CAPP 2013; Honarvar *et al.* 2011). Governments are engaged in advertising campaigns extolling the virtues of oil and gas development, while much of the criticism of the expansion focuses on specific themes such as greenhouse gas emissions. While these critiques provide important insights, they do not provide a comprehensive understanding of the overall dynamics of staple development.

Thanks to the efforts of Watkins and the Canadian staple tradition he helped to spark, we have a rich analytical framework for understanding the current oil and gas boom. While a comprehensive analysis is beyond the parameters of this short overview, it is useful to provide a brief outline of how staple theory would be applied.

The starting place is Watkins' 1963 article. Watkins explains how external demand stimulates growth through the extraction of the staple, and through the series of spread effects that he divides into the well-known categories of forward, backward, and final demand linkages. Later Watkins and others (Kierans 1973; Gunton and Richards 1987) added what Hirschman (1981) terms the fiscal linkage, defined as the "rent" generated by the staple. The production function defines the potential linkages of the staple. Growth can occur over time; the economy may either diversify as it surpasses critical thresholds for new activities (the optimistic paradigm) or stagnate if and when the staple sector declines due to changes in demand and/or exhaustion of the staple (the pessimistic dependency paradigm).

Watkins identifies key factors that influence the course of this development. Some such as external demand, quality of the staple, and the production function are exogenous variables largely beyond the control of the staple producing region. Other factors such as the ownership of staple industries and the distribution of rent are endogenous — in the sense that they could potentially be managed by the staple region, albeit with great difficulty.

One endogenous factor cited by Watkins is foreign ownership, which can inhibit growth by leaking income from the staple region to compensate foreign owners and by relying on foreign-located forward and backward linkages instead of developing them within the staple region. Another factor

is an "export mentality" that leads the staple region to concentrate on the staple to the exclusion of alternative investment opportunities. This mentality engenders excessive optimism that leads to overinvestment in the capital-intensive staple, leaving a legacy of rising debt that is increasingly difficult to service in the face of declining commodity prices and rising production costs (as the most productive staple resources are exhausted). The result is a severe and protracted downturn and a period of painful readjustment.

Watkins also highlights the potential negative impact of staple development on the subsistence or domestic economy. According to the staple model, governments can become subservient to the staple sector, focusing on stimulating short term growth by subsidizing development.

What insights can staple theory provide about the current oil and gas boom? Conventional predictions of the economic effects of oil and gas developments are used uncritically to demonstrate the contribution of the sector to the Canadian economy. CERI (Millington *et al.* 2012), for example, in a recent study estimates that new oil sands projects will generate $2.1 trillion in economic activity and almost one million person years of employment between 2012 and 2035. The assumption is that such growth is beneficial.

Staple theory takes a more analytical approach and asks whether this expansion indeed contributes to the long run sustainability of the economy. How does forecast growth compare to potential growth both in terms of magnitude and structure? Are the potential spread effects fully exploited — and if not, why not? Although the answers to these questions require detailed analysis to estimate actual relative to potential effects, available evidence suggests that the linkages in the oil and gas sector are not well developed and consequently the potential contribution of oil and gas development to Canada is not being maximized.

The industry's own forecasts show that almost all of the new oil production will be exported in an unprocessed state to be refined in foreign markets (CAPP 2012). Raw bitumen will not even be upgraded into crude in Alberta, despite the fact that upgrading reduces shipping costs by avoiding the need for diluent, which is necessary to ship bitumen in pipelines. Crude is also more marketable than bitumen because of the larger number of refineries that can process crude (Enbridge 2010). Many of the backward linkages are also not developed in Canada. Ironically, the Alberta government's own website provides a "U.S. Economic Impact Oil Calculator" that documents the industry's reliance on U.S. suppliers, and concludes that one-third of all the jobs generated by Canadian oil sands expansion will be created in the U.S. As the website states:

> Refineries across the U.S. are hiring workers to build new units that can process oil sands output. Most of the giant trucks used to produce the oil sands are manufactured in Illinois. Much of the software to run the complex production systems comes from California's Silicon Valley. The oil sands industry is demanding leading-edge water treatment systems, environmental technology, hydrocarbon processing equipment, and countless other goods and services, much of it imported from across the U.S. (Alberta 2013).

There are many reasons why these linkages are not developed in Canada. Some may be based on economic fundamentals such as the availability of low-cost surplus refining capacity in the U.S. (relative to higher-cost new capacity in Canada). Some may be due to the institutional bias of foreign firms to supply existing refineries that they own, instead of building competing facilities within the staple-producing region. As discussed above, the rationale for upgrading bitumen into crude to reduce transport costs (by up to 60%) and increase the marketability of the oil is persuasive. The role of these and other factors requires detailed analysis. However, unlike conventional analysis that simply accepts the outcomes as a given, staple analysis asks what the actual and potential spread effects are, what factors determine the spread effects, and what can be done to strengthen linkages within the staple region.

Staple analysis also focuses on the fiscal linkage. How much rent is generated by the staple, and where does the rent go? These are important questions that address both the contribution of the staple to development — which is a function of the proportion of rent reinvested back into the staple region relative to the proportion leaked — as well as the equity questions of who gains and who loses from staple development. Maximizing the contribution of the staple requires collecting rent and distributing it equitably to the owners of the staple; in the case of oil and gas, this is the public in the producing regions.

Again, available evidence suggests that a large proportion of rent is foregone by the public owner and retained by private sector oil and gas companies as a surplus return above normal returns to private capital. Plourde (2010) estimates that the private sector retains between 38% and 65% of the rent even under the new more aggressive Alberta royalty regime. A more recent study by the oil sector using a different methodology concludes that the private sector retains 65% of the revenue from an oil price increase (Egglington *et al.* 2012), while a cost-benefit analysis of a major project estimates rent retained by the private sector is in the range of 35% (Joseph *et al.* 2013).

Given that 47% of the profits to the oil and gas sector accrue to foreign owned companies (StatsCan 2012), most of the rent retained by the private sector is ultimately leaked to foreign owners.

Another economic impact addressed by staple theory is the effect of the staple expansion on other sectors. While conventional analysis considers only the positive linkages, staple theory looks at both the positive and the negative. Expansion of the oil and gas sector can negatively impact other sectors by using labour and capital that would otherwise be available to support growth elsewhere in the economy. Expansion of oil and gas can also undermine the competiveness of other sectors by raising the exchange rate: the so-called Dutch disease. Estimating the negative impacts of oil and gas expansion on other sectors is complex and subject to many uncertainties. Nonetheless there is little doubt that a significant proportion of the labour and capital employed in the oil and gas expansion would have been employed elsewhere in the Canadian economy in the absence of oil and gas expansion. Labour and capital have in economic terms an "opportunity cost". There is also ample evidence that the expansion of the oil and gas sector has raised the value of the Canadian dollar and that this has resulted in a reduction in the Canadian manufacturing sector (Bimenyimana and Vallee, 2011; Campbell, 2011; Clarke *et al.* 2013; OECD 2012; Woynillowicz and Lemphers, 2012).

As Watkins illustrated in his work for the Dene (Watkins 1977), staple theory is also useful in understanding the impact of staple development on First Nations. If First Nations are integral to the extraction of the staple (such as in the fur trade), they may receive some benefit from staple economy. If they are obstacles to staple development, First Nations are more likely to be excluded and potentially harmed to the degree that their traditional economic activities are negatively impacted by staple extraction.

The oil and gas sector is an increasingly complex environment for First Nations. First Nations' traditional subsistence activities are clearly jeopardized by environmental impacts of oil and gas development. Contamination of the environment by release of toxic chemicals and oil spills threaten First Nations water and food supply, and current compensation and regulatory regimes are inadequate to protect First Nations interests (Gunton and Broadbent 2012). Aboriginal rights and title affirmation by Canadian courts does provide some protection for some First Nations. While First Nations possessing rights and titles do not have clear veto power over resource development, the oil and gas sector is required to engage in meaningful consultation and seek accommodation of First Nations interests in resource de-

velopment plans. This has led to the emergence of Impact Benefit Agreements that provide direct benefits to some First Nations (Coates and Crowley 2013).

Another key component of staple analysis is the role of government. Governments in staple theory are not independent actors rationally choosing policies based on the "public interest" as assumed in government legislation governing oil and gas expansion such as the *National Energy Board Act* and the *Alberta Responsible Energy Development Act*. Instead, as the dominant sector driving economic activity, staple industries are able to successfully pressure governments to implement policies that serve the interests of the staple sector. Governments become promoters of staple expansion by setting weak regulatory regimes conducive to development, providing infrastructure, expediting regulatory review processes, providing marketing support, and "managing" opposition to staple expansion.

Again the evidence on the oil and gas sector lends support to the staple theory analysis of government. The federal government, for example, recently amended Canadian regulatory legislation to expedite the approval process for pipelines and restrict the role of potential opponents in the hearing processes (Westcoast Environmental Law and Ecojustice 2012). Measures to address greenhouse gas reductions have been delayed or, in the case of the Kyoto Accord, abandoned. Caps are set on liability for oil spill damages to protect the oil and gas sector (Gunton and Broadbent 2012), while promotional programs extolling the virtues of the oil and gas sector are being implemented and aggressive lobbying efforts to secure access to foreign markets, such as the Keystone XL lobby in the U.S., are being implemented. The government attacks opponents of expansion as foreign radicals (Oliver 2012). And as discussed above, governments have done a poor job in collecting rents for the public owners and have subsidized the expansion of the oil and gas sector by over $2.8 billion per year (Sawyer and Stiebert 2010).

The staple theory's contribution to understanding the development cycle is another key contribution. Preceding this year's Nobel laureate Robert Shiller's theory of "irrational exuberance" by 50 years, Watkins warns in his 1963 article of the "excessive optimism" in the staple sector that causes booms to proceed beyond their proper limits, generating excess capacity that leads to downturns and financial collapse.

Previous resource booms such as the post-1979 petroleum boom exhibit this excessive optimism dynamic (Gunton 2003; 2004). The current boom displays similar features. As discussed above, the Western Canadian oil sector is undertaking an unprecedented expansion and the fed-

eral and provincial governments are urging even more rapid expansion to avoid "missed opportunities" in export markets. The result is that prices for Canadian oil exports are already being depressed by the too rapid expansion of the sector — the so-called bitumen bubble — as regional markets are unable to absorb the increased output (Egglington *et al.* 2012; Moore *et al.* 2011). A further doubling of production will do little to stabilize export prices. The large number of LNG projects being considered for BC exceeds forecast demand and is based on a large differential between North American and Asian prices that may not last, leaving BC with uneconomic projects (Gunton and Broadbent 2013). The Canadian industry is a relatively high-cost producer and therefore is highly vulnerable to the inevitable downturns in markets. Staple theory provides a clear warning of the dangers of such excessive optimism and the need for a more prudent approach of slower sustained growth.

Ownership is another key theme in staple theory. As Watkins illustrates, ownership affects staple development by impacting the location of spread effects and impacting the development of domestic entrepreneurship. Again, very little analysis of the Canadian oil and gas sector addresses the role of foreign ownership. Almost one-half of oil and gas assets in Canada are foreign-owned (Statistics Canada 2012), and incremental oil production is being used to supply refineries outside Canada. Some oil is being traded within existing companies according to intra-company transfer prices, which makes the collection of royalties challenging. This is particularly true for lower-value products such as bitumen for which there is not a well-developed market price that can be used to determine royalty payments (ARRP 2007). In fact many existing Alberta oil producers directly benefit from the depression of Canadian export prices by realizing the benefit of higher refinery profits (due to lower crude supply costs) while paying reduced royalty payments to Alberta. And what incentive do state-owned companies such as China's CNOOC have in maximizing the export price of Canadian crude or developing refining capacity in Canada? Even the federal government seems to be belatedly aware of the implication of foreign state-owned enterprises, as represented by its stricter takeover policy implemented after approval of the takeovers of Nexen and Progress Energy in 2012 (Harper 2012).

What policies should be implemented to maximize the contribution of staples to Canada? Again staple theory provides clear and persuasive guidance. According to staple theory, a successful strategy should include the following key components:

- Collect rent and ensure that it is reinvested back into the Canadian economy.
- Develop linkages where economically feasible to maximize the spread effects. For example, there is a strong case for at least upgrading bitumen prior to export to reduce transportation costs and increase the marketability and hence net return.
- Maximize long run rent by slowing the rate of expansion to a sustainable pace to help moderate construction costs, prevent downward pressure on export prices, and reduce the negative impacts on other sectors of the economy.
- Mitigate environmental costs by reducing greenhouse gas and other emissions, making Canadian oil and gas the cleanest fossil fuel in the world.
- Fully engage impacted First Nations in development planning and preparation of impact benefit agreements that ensure an equitable distribution of benefits.
- Invest in training Canadian workers for oil and gas employment.
- Phase out all government subsidies to the Canadian oil and gas sector.
- Restrict foreign takeovers and strengthen domestic ownership of the oil and gas sector.

As staple theory cogently illustrates, developing staples is a challenging endeavour filled with both opportunities and pitfalls. As Canada embarks on its current expansion of oil and gas, Canadians need to assess the degree to which this expansion serves Canada's interest. And thanks to Mel Watkins, we have a powerful analytical framework for undertaking such an assessment. We can only hope that more researchers follow the lead of Clarke *et al.* (2013) and use staple theory to analyze the current boom in Canadian resource developments. This would improve our understanding of the current staple boom, and hopefully encourage a more prudent approach to developing Canada's oil and gas sector.

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Alberta's Sands, Staples and Traps

Gordon Laxer

WHEN DWIGHT "IKE" Eisenhower appointed "Engine Charlie" Wilson his Secretary of Defense, Wilson, who headed General Motors, was asked if he could make a decision adverse to General Motors' interests. Yes, but I can't conceive of such a situation "because for years I thought what was good for our country was good for General Motors, and vice versa."

Sixty years later, Alberta and Ottawa hold a similar blinkered view. Except it's Alberta's Sands oil not autos that run this country. "What's good for the oilsands is good for Alberta and Canada" is the refrain. Greed around oil, especially of the tarry sort, so distorts the petro elite's perceptions, they can't conceive of, or at least countenance, a Canadian public interest separate from that of exporting as much Sands oil as possible.

If Alberta continues to pin all its hopes on the Sands, it may well suffer a fate similar to the auto rust belt in Michigan and southwestern Ontario. In the 2030s, people will shake their heads about the folly of Alberta having madly excavated its way down into a "fossil fuel belt," while elsewhere they stopped buying or transhipping dirty Sands oil and moved on to a low carbon society. Alberta's economy was left with little but the detritus of closed Sands projects and leaking tar pits.

This is not Alberta's inevitable future. But it is bound to be if Alberta doesn't start changing course now.

The Alberta Premier's Council for Economic Strategy, headed by former Trade Minister David Emerson, acknowledged the danger of Alberta failing to diversify its economy. Their 2011 report warned that "the creation of an affordable, environmentally friendly alternative to oil would be a great thing for the world. It could be economically devastating for Alberta if, when it happens, we are still heavily dependent on oil exports."

Daniel Trefler, a University of Toronto Business professor, asks whether Canada wants to be an innovation-based economy or a resource-based economy. Unfortunately, we can't be both. Trefler calls the decimation of Canada's innovation based economy, centred in manufacturing, the "loonacy" of parity with the U.S. dollar.

As the commodity-driven Loonie rises, "it becomes too expensive to produce innovative goods and services in Canada ... That's Dutch disease. That's the weakness of a strong loonie" ("The loonacy of parity: How a strong dollar is weakening Canada," *Globe & Mail*, October 16 2010).

The *Economist Magazine* coined the term "Dutch disease" in 1977 to describe the effects of a North Sea natural-gas boom in the Netherlands in the 1960s. It drew in vast amounts of foreign capital, greatly inflated Holland's Guilder, and priced Dutch manufactures out of domestic and export markets.

Never having heard of Harold Innis, Canada's brilliant political economist who developed a grand narrative of Canadian history as depending on a succession of staples — the export of raw materials — the *Economist Magazine* came up with "Dutch disease."

Previously accepted by the political right, centre and left, "Dutch disease" became ideologically charged in Canada in the spring of 2012 when Thomas Mulcair raised it in a hard-hitting *Policy Options* article.

Dutch disease was then catapulted from the obscurity of academic and policy wonk discourse to public debate. Brad Wall, Saskatchewan's petro-promoting premier, attacked newly-chosen NDP leader Mulcair for blaming the loss of jobs in manufacturing and other sectors on the tar sands' role in boosting the Canadian dollar. Unfortunately Mulcair backed down, and says he is never going to preach against developing the oilsands.

How useful is Innis' staples approach in explaining how big, mainly foreign oil companies in Alberta's Sands fashioned Alberta's and Canada's economic policy around their interests, even framing the TransCanada's Energy East pipeline that would export more Sands oil as "nation building"?

The staples approach brilliantly explains how Canada got caught in a series of resource or staple exporting ruts. The oil boom in Alberta's Sands is the latest example of how digging up tons of stuff and shipping it out raw

distorts Canada's economy and kills more jobs than it creates. But the approach is less good on how to get out of staple traps.

Brendan Haley takes us a giant step forward, arguing that the staple trap around bitumen is also a carbon trap ("From Staple Trap to Carbon Trap," *Studies in Political Economy* 88, Autumn 2011). I then go a step further to argue that using the staples approach to understand and overcome the dominance of Sands oil, can itself be an intellectual trap.

Mel Watkins' 1963 article on the staple theory of economic growth was a landmark; I regularly assigned it in grad seminars. While very illuminating, the article has limitations associated with Watkins' early liberal phase, as Mel readily recognized in later revisitations of the article. Written when an applied version of Keynesianism was at its height as official doctrine in the capitalist West, Watkins' staple theory of economic growth is infused with Keynesian assumptions.

Watkins' original article reformulated the economic history insights of Harold Innis into a theory of economic growth. It is a capitalist developmental model around a resource base, a variant of a more general growth model built around exports as the leading sector. External demand for resources drives the staples variant.

Watkins took up A.O. Hirschman's concept of "forward, backward and final demand linkages" to show how a staples economy could diversify beyond a simple, hewers-of-wood base. The key is that industries develop that are closely linked to the exported resources. Forward linkages often focus on primary manufacturing to upgrading the raw resources before exporting. In oil, these linkages could be built around bitumen upgraders, refineries and a thriving petrochemical industry.

Branching out further from oil and natural gas could lead to producing everything made of plastics, solvents, fibres, pesticides and coatings. Alberta never got far down that path. In the 1980s and 1990s, Alberta had a successful petrochemical industry based mainly around turning Alberta's temporarily cheaper natural gas into intermediate goods like ethylene, propylene, butylene and benzene.

But Alberta was in a very narrow, semi-industrial rut. Although it had some forward and backward linkage industries, it remained highly dependent on continued external demand for oil and natural gas. Petrochemicals supported more jobs than exporting raw materials only, but an economy built mainly around the exported resource is not much better off than a pure resource exporting one because they usually provide few jobs and tend to rise and fall with the staple. That's not true diversification.

Backward linkages encompass activities that enable the resource to be extracted and moved to market. They can include building the roads, pipe for pipelines, and machinery used in extraction — such as oil derricks and supersized trucks that remove the Sands "overburden."

The *Bitumen Cliff* report written by Tony Clarke, Diana Gibson, Brendan Haley, and Jim Stanford (Canadian Centre for Policy Alternatives, 2012) shows that Alberta spends over $20 billion a year on machinery and equipment, the demand for which is greatly driven by enormous capital spending in the Sands. Most of the supersized trucks are imported.

The Keynesian, final demand linkage (the third diversification prong in Watkins' staples theory) provides a possible route out of a narrow resource base and closely associated industries. It is a market-oriented way for domestic industry to grow up around resource workers, if their consumer spending creates sufficient demand to support a broad range of local goods and services. If the population grows enough, it can sustain economic activities that have nothing to do with the original resources, or later discovered ones. It's become diversified.

The oil and gas staples have boosted Calgary and Edmonton into million-plus cities with enough people to *potentially* sustain diverse sectors, in ways that, say, Saskatoon and Regina, cannot. I say potentially because they have not yet realized most of their possibilities. Focus on oil and gas hinders broadening out. When the best money can be had in oil and natural gas, why bother with other pursuits?

The final-demand linkage model is very limited, depending too much on a passive market paradigm. Peter Lougheed's Progressive Conservative government of the 1970s and early 1980s pursued this strategy, and the Alberta NDP currently promotes a variant of it.

Unions, the Alberta NDP and the federal Greens now demand the upgrading and refining of Sands oil in Alberta. They are by no means sure of winning this demand. The diversification strategy runs the risk of resource depletion, or boycotts against environmentally-destructive extraction and upgrading processes. But if they do win, it will create workers and businesses whose economic interests lie in hindering effective climate action such as reducing the demand for oil, or switching to alternatives such as wind, solar or deep geothermal to power up electric cars, trains and rapid public transit.

It would dig Alberta and Canada deeper into supporting the development and continuation of the Sands for the foreseeable future. Once new sunk costs in upgrading and refineries are added and refinery workers and

their families settle in, how could unions and the NDP then advocate phasing out the Sands? They couldn't and wouldn't.

We must not let the major constituencies capable of pushing a new vision for Alberta and Canada get sucked in to defending the carbon-emitting, destructive status quo of Alberta's Sands. Instead of being important forces pushing Alberta and Canada toward a transition to a new green economy, they would become part of the problem.

I used to support the staples diversification model. Upgrade the resources in Alberta. Don't export 'our' jobs. Use way less energy, but get way more value added from it. Now I think it's a dead-end. It bets that the age of fossil fuels will unproblematically continue, and that we can blithely continue to spew out carbon without limit.

As we saw, the staples theory views the final demand linkage as the best way to fully escape a staple trap. It's based on consumer spending and economic growth.

The Keynesian post-war bargain went like this. If workers and their political allies agreed to forget their long-held dream of replacing capitalism with a more just system and accept annual pay raises instead, they would stay in alienated jobs with long work hours, but reap the rewards of middle-class, consumer lifestyles as compensation. The grand bargain led to a mass society fixated on over-consumption. It will bury us in carbon and climate change chaos.

A better path is deep conservation. A unit of fossil fuel energy saved and not burned is much better than one extracted, used up and emitted. Many more jobs can be created in saving a unit of carbon energy — through things like building LRTs, a high-speed intercity train between Calgary and Edmonton, and retrofitting buildings and houses.

Brilliant theories are usually double-edged swords, illuminating the way through seemingly disparate, murky phenomena and at the same time blinding us from other paradigms. So it is with the staples theory. It's hard to beat its explanatory power regarding how Alberta Sands oil got to be Canada's latest staple, impeding broader development. But with its Keynesian, consumptionist premises, the staples theory (in that original incarnation) can also be an intellectual trap, that hinders our transition to a low carbon future.

"Rowing and Steering" Our Way Out of the Modern Staples Trap

Daniel Drache

The Pivot of Institutions and Economic Culture

MAINSTREAM ECONOMISTS HAVE long assumed that Canada and the United States operate from a shared rulebook because they are highly interdependent, liberal market economies. Yet studies by McCallum (1995), Banting and Simeon (1997), Helliwell (2002), Jackson (2002), and Drache (2004) have documented the divergent market patterns and practices between the North American neighbours. Other economists like Myrdal (1957), Hirshman (1958), Krugman (2008) and Stiglitz (2010) stressed the need to build linkages between the fast growing resource sector and the weaker and underdeveloped industrial side of the economy. More recently, Mel Watkins' 2007 restatement of the staples trap model provided critical distancing from the foundational work of Innis (Watkins, 2007) and updated the theory of export-led growth in important ways.

The key features of the successful "Northern model of development" were the provision of mixed goods and social programs for working fam-

ilies and individuals, complemented by the general expectation that the government would play a large and significant role in the economy. Canadian public policy at its best was, in the vivid conceptual language of Peter A. Hall and David Soskice, a textbook example of a "coordinated market economy" — not a Hayekian liberal variant. The critical difference between the two archetypes was the large regulatory role of the state, "rowing and steering" the economy during resource commodity booms (Hall and Soskice, p. 8). Canada's unique model blended many elements: skilled human resources, a high-wage manufacturing sector, the dynamism of its powerful resource-based export sector, a modern public infrastructure, a robust financial sector, macro-economic stability, and a relatively unionized workforce. These were the critical elements that produced (until the turn of the century) a successful export-oriented growth strategy — driven by some of the best Canadian public policy practices.

Since 2000, however, the predominance of natural resources as well as neo-liberal cutbacks and the shrinking of redistributive policies and programs, have all favoured private wealth creation to an unprecedented degree. The proactive Canadian state had its wings clipped in dramatic fashion. Canada's policy space has been reoriented rapidly towards the Hayekian end of the spectrum. This bodes badly for Canada's ability to reign in the latest resource boom, and attain an economic trajectory that is more socially and environmentally sustainable.

The Innisian Insight

Innis' essential insight was that structural imbalances from external demand and the price distortions of commodity booms expose Canadian industries and communities to a highly volatile business cycle. Canada pays too high a price in terms of these externalities. It remains at the mercy of price spikes and the boom-bust demand cycle for Canada's rocks, logs, and energy staples. Each time the bubble bursts, Canada is left with a mega debt hangover due to the enormous fixed-cost investments required for export infrastructure.

The problem is visible once again in the current energy export boom. Today's pipelines are being built on the assumption that the world price for oil will stay well above $100 per barrel, but the unpredictability of global prices coupled with an oil glut in the U.S. market has actually driven prices down. Mega-projects begun in the upside of the cycle prove to be unsustainable economically in the downside.

In the same way, at the end of the nineteenth century, the 'animal spirits of the wheat economy' led to a frenzy of unsustainable but lucrative railway building. Quickly, by the turn of the twentieth century, the three transcontinental lines were bailed out by the government and merged into two. It seems those lessons have been forgotten, as we repeat the same errors in overbuilding an expensive, unsustainable energy export infrastructure.

Innis rightly emphasized that Canada needed an altered trajectory to mobilize its resources in order to build strong industries, deepen its domestic market, and create new and better employment opportunities. Without a national strategy, investment follows the continental grooves of geography. The process is driven by a 'hot' energy sector sucking foreign direct investment into mining, oil and gas, and metals, lifting stock markets. Higher resource prices affect the exchange rate, with a disequilibrating impact on consumer and energy prices. An overvalued dollar knocks small- and medium-sized firms out of the competitive race, as they are forced to compete at a currency disadvantage too large to be offset by other factors.

Canadians needs to recognize that the current staples trap is reproducing once again the problems of structural imbalance, debt hangover, and the hollowing out of Canadian industry. Ottawa's approach has been to rebuff any notion of a viable energy policy, and instead let so-called market forces pick the winners. Canada's past policy successes required government to row and steer the economy — but Stephen Harper hardly sees this as his role.

The path to any substantive change in Canada requires us to examine the past and learn the historical dynamics. If the Canadian state can no longer "row and steer" the economy, it will be impossible to have national environmental policies and national resource strategies with realistic goals and realistic chances of success. The current resource boom is swamping any viable notion of an effective and comprehensive national energy and environmental policy.

All of these transformations are political with roots that stem from political power. Today's resource curse is more complex, multi-stranded and transnational than in Innis' day. It is rooted in more than commercial dependency on the U.S. market. It has led to a variety of rigidities with crippling consequences for an economy burdened by debt and a shrinking industrial core. It has intensified the conflict between regional needs and local institutions — and the parallel conflict between local markets supporting indigenous developments and a compliant laissez-faire state. Regional specialization in resource exports has limited the role of central government, fragmenting policy space and weakening national regulatory capacity (including, crucially, the capacity to set environmental standards).

Six Elements of the Modern Staples Trap

Six identifiable elements of the modern staples trap create powerful negative externalities, requiring state intervention to overcome them. If there is no direct mechanism to take these factors into account in our analysis, nor any judicial order to reveal them, then the effects of these externalities will be concealed in the prices of the transactions between Canada and other transacting parties (Boutang, 2012). These externalities add up to a more dangerous staple trap than Michael Porter singled out in his 1992 major report on Canada's competitiveness for Business Council of National Issues (entitled *Canada at the Crossroads*). The six factors include:

- **'Dutch disease':** Over-specialization in resources has significant adverse effects (experienced through the currency) on manufacturing competitiveness. In a 2013 study, the IRPP found that about a quarter of total manufacturing industries show a pronounced negative relationship between U.S. exchange rate and manufacturing output. Hardest hit are labour-intensive and smaller firms such as textile and apparel, machinery, and consumer products.

- **De-industrialization:** The loss of manufacturing capacity results in the hollowing out of Canadian industry, with significant and long-term job loss. Branch plant firms are closed down as production is shifted to the U.S., Mexico or other low-wage production centres. Small- and medium-sized firms cannot compete with imported goods.

- **Policy drift:** A deliberate federal policy of "drift" has become a real barrier to the effective, balanced management of Canada's resource economy. Each firm, driven by global competitive pressures, sets its own expansion strategy independently, on a catch-as-catch-can footing. Each province is eager to exploit its resources for much-needed cash revenues. Technology transfer, skilling of the work force and access to capital are not co-ordinated between Ottawa and the provinces, but are industry driven. Laissez-faire ideology reinforces the dominant tendency in Ottawa to unilaterally abandon policy-making or regulatory capacity. Given the continuing volatility and uncertainty which mark this industry (such as the potential implications of the stunning increase in oil production in the U.S.), this unilateral disarmament on the part of the central government is dangerous indeed.

- **Policy capture:** The extreme political influence of staples industries (in the modern setting represented especially by the powerful energy lobby) is not a new factor by any means, but business advocacy and insider lobbying by energy giants (and banks, too) have intensified. Their opposition to a sustainable national energy policy has for the time being succeeded in blocking a national environmental strategy, the litmus test of its power. Canada is now firmly in the U.S. Republican camp of trying to ignore global warming, and rejecting any national or international regulatory strategy to deal with it.
- **Labour markets:** Job-killing technology is another negative externality. The intense focus on efficiency gains and increased productivity in many industries means companies shed labour as they become more efficient. New hire rates are not adequate to restore employment conditions to 2008 pre-crisis levels. Business benefits from the overall development of society and the educational attainment of its population, yet Canada continues to be a laggard with no fully developed employment strategy.
- **Stewardship:** Despite green shoots of supportive public opinion for a national energy strategy, Canada has a very weak notion of strategic stewardship. Ottawa does not have a sovereign wealth fund, like Norway, financed by energy royalties. Canada has not renegotiated a better deal from oil MNCs — as Brazil did when it forced energy corporations to pay a larger share of resource revenues from the discovery of deep ocean gas reserves off its coast. Alberta's wealth fund established in 1976 is still the size of a peanut: just $16 billion compared with Norway's (which was created in 1990, with a clear strategic vision) $800 billion. There are more than a hundred such sovereign funds globally, with $80 trillion in combined assets. Yet Canada, as the 7th largest oil producer and 3rd largest gas producer, is 'lost in translation'. Ottawa does not believe in the need for a 'war chest' for uncertain times and national developmental goals.

Escaping the Staples Trap

The central challenge of the staples trap is to find a way out of deindustrialization, the dangerous debt overload from mega-resource projects, and the unprecedented job losses in core manufacturing industries resulting from an over-valued dollar. Some regions fare better from a resource boom, but

even having multiple regions exporting Canada's wealth from the ground can only lead to more imbalances and twisting of markets. Winner-take-all regional economies do not want Ottawa to co-ordinate national goals and objectives; rather they hide behind a narrow regionalism that Innis was highly critical of. This leaves giant corporations like Enbridge and Vale in charge of Canada's resource future. Still, the public supports reducing greenhouse gas emissions and moving in a greener direction.

Innis was an institutionalist, not a determinist; he assigned primary importance to the policy environment and its regulatory institutions. If a government leads from the rear, the outcomes are suboptimal. An out-in-front government can set strategic goals and the appropriate means to achieve them. We need to look at how other jurisdictions unlocked the 'trap' of erroneous policies from the past (Drohan 2012). Deviations from orthodoxy or, more precisely, policy innovations ultimately stem from changes in power relations.

In Canada, we must build a very different policy environment to escape the modern staples trap and address the imbalances of fixed overhead costs, mountains of debt, and over-investment in unsustainable mega-projects. Other countries have successfully climbed out of the staples trap, altering their economic trajectories. A survey of this experience suggests that seven conditions need to be met.

First, there must be a champion inside the political class to make it happen: such as a latter-day Walter Gordon or Eric Kierans. Second, there must be a strategic purpose and moral compass for environmental and redistributive goals. Third, the country must possess a valuable commodity that gives the state the leverage to negotiate new resource revenue sharing with MNCs (revenues which in turn are recycled to support broader development goals). Fourth, the country needs a modern infrastructure. Fifth, public opinion must be on side to demand fundamental policy changes. Sixth, there need to be credible new ideas to transform the "resource curse" into a blessing. This requires a strategy to use resources as a driver of domestic growth and diversification, competitive industries, and strong job-creation. The final ingredient, of course, is luck. Here, timing is key: the optimal moment to introduce a national energy policy is during the upswing of a commodity boom, when the state has optimal leverage with banks and resource players.

No country ever has all these ducks lined up. But fresh ideas, strong leadership, and optimal timing are the key ingredients that could allow Canada to attain a more promising future than blindly riding the staples roller-coaster yet again.

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Why Linkages Matter

Jim Stanford

MEL WATKINS' PIONEERING WORK on staples theory continues to help Canadians understand both the opportunities and the risks of our staples-dependant economic trajectory. After Mel's 1963 article, and his subsequent policy advocacy (on Walter Gordon's task force and other initiatives), it seemed for a while that Canada was gradually escaping its staples trap. We experienced decades of uneven but important progress in diversifying our sectoral mix, reducing reliance on incoming foreign direct investment, and building significant and globally successful clusters of tradable value-added industries (including auto, aerospace, telecommunications equipment, and some tradable services). By the turn of the century, raw and barely processed resources accounted for well under half of Canada's total merchandise exports — the lowest in our history (Stanford, 2008).

Early in the new century, however, the logic of staples dependence reasserted itself. Inflated global commodity prices (especially for oil, some minerals, and agriculture) sparked major inflows of capital into expanded staples production in Canada. Exports of raw staples grew substantially (driven mostly by higher prices, and less so by higher quantities); profits in staples industries were enormous but volatile. At the same time, many value-added industries went into a long decline — and that slide was not independent from the renewed staples boom. In particular, the petro-fueled 65-percent appreciation of the Canadian currency (taking it from well below, to

well above, its fair value within 5 years),[1] was a major cause of the decline that is still being experienced in *all other trade-sensitive industries* (including manufacturing, tourism, and tradable services).

By 2012, raw and barely-processed resources once again accounted for two-thirds of total exports. Yet, perversely, Canada's total exports declined by one-third as a share of GDP from 2000 through 2012 (with the decline in non-energy exports far outweighing the increase in energy exports). Incoming FDI doubled as a share of GDP compared to the mid-1980s — reaching a higher level (34 percent) by 2009 than when Watkins published his original 1963 article. The current account balance shifted from surplus to large, chronic deficit (adding an amount equal to over 3 percent of GDP each year to Canada's foreign debt). Even with high commodity prices, it seems, Canada cannot extract and export staples fast enough to pay for its imports of more sophisticated (and more expensive) goods and services. Productivity suffered from both the unplanned, boom-time nature of new investments (Stanford, 2011), and the inevitable decline in productivity that is normally experienced in resource extraction (as the most easily-tapped deposits of non-renewable minerals are exhausted). The helter-skelter boom in staples industries (experienced most dramatically in bitumen) created economic opportunities in some regions, but many problems, too: including regional crises in housing, infrastructure, and labour supply; immense strains in our system of fiscal federalism; and a spate of environmental problems, both localized and global.

The most important of these, of course, has been the growth of greenhouse gas emissions from bitumen production. The industry trumpets important reductions in the emissions intensity of each barrel of produced bitumen, but those savings are overwhelmed by the rapid expansion of total bitumen output — and the biggest growth in output is yet to come, according to forecasts which expect a tripling of bitumen production (to 4.5 million barrels per day) in the next two decades. GHG emissions from new bitumen production have blown the lid off Canada's Copenhagen targets (which were grudgingly accepted by the Harper government, even as it became the first government in the world to withdraw from the Kyoto Protocol). They have also squandered the GHG reductions achieved elsewhere in Canada's economy (such as through the expensive phase-out of coal-fired electricity generation in Ontario).

In short, the key features of the staples trap first identified by Watkins are all visible again in Canada today: A cozy compact between government and the staples-exporting industry (described in detail in Clarke *et al.*,

2013). Enormous, publicly-subsidized investments in export-oriented infrastructure. Pressure to extract and export the staple in ever-larger volumes to amortize development and infrastructure costs faster. A cumulative reinforcement of the dominance of the staple as seemingly the only path to economic progress — even as the risks of staples-reliance become increasingly obvious. Regional inequalities and tensions between staples-producing regions and the rest of the country. And weak spin-off effects (forward and backward linkages, to use Watkins' 1963 terminology) from the staples industries for investment, innovation, and capacity-building in other parts of the economy.

One dimension of the modern staples problem that is clearly more important today than in 1963, is the environmental constraints and consequences of staples production. Resource industries have always confronted the natural environment more directly than other sectors of the economy, and a legacy of environmental degradation has always been a major downside of unthinking, unmanaged staples extraction. But the growing challenge of climate change means this dimension must be considered more centrally in our analysis of staples — as Brendan Haley, for example, has done in this collection (and in his important 2011 article).

Watkins' 1963 article argued that pro-active policy interventions were required to break the self-reinforcing logic of the staples trap, and set the economy on course toward a more diversified and self-directed form of development. This strategy did not recommend trying to suppress staple industries. It focused, rather, on carefully regulating the pace and character of staples development. Key planks in this policy strategy included:

- Recognizing and enhancing the forward and backward linkages of resource production, through which staples activity could translate into a more fulsome and well-rounded form of development (both quantitatively and qualitatively).
- Regulating foreign investment, foreign ownership, and foreign trade in the staple industry, for all the well-known reasons.
- Acting to foster investment and capacity-building in other value-added sectors of the economy (including manufacturing and services), so as to reduce the entire economy's vulnerability to future staple cycles and attain a more self-sustaining, well-rounded prosperity.

Watkins also explored the political-economy of fighting for those kinds of reforms, recognizing in particular the confluence of power between staples

producers, foreign capital, and a staples-beholden government that would pose a formidable (but not insurmountable) barrier to change.

I believe this reform agenda is largely valid in its application to today's most recent manifestation of staples-dependence in Canada. For example, taking pro-active measures to strengthen linkages and spillovers from resource projects and other staples industries (at the same time as regulating foreign investment, and fostering a broad slate of other value-added industries) would be a powerful remedy for the current deindustrialization which is a devastating side-effect of Canada's 21st-century staples resurgence.

For example, in the petroleum sector, input-output analysis has indicated that the supply chain feeding oil and gas producers (including bitumen) runs mostly north-south (not east-west), stimulating huge business for U.S.-based manufacturers and other suppliers who provide the lion's share of inputs (equipment, supplies, and services) to Canada's petroleum industry. According to the Canadian Energy Research Institute, the spin-off economic benefits from bitumen production in Alberta are 5 times larger in the U.S., than they are in Canadian provinces outside of Alberta (see Clarke *et al.*, 2013, pp. 80–81; and Honarvar *et al.*, 2011). No better symbol of the weaknesses of the domestic linkages (and the failure of domestic policy to strengthen those linkages) could be provided than the case of Caterpillar. This U.S. machinery giant sells billions of dollars of equipment to Canadian resource projects (including bitumen mines), but closed its only Canadian manufacturing operations in 2012 and 2013. One was the ruthless closure of its London, Ont., locomotive plant (following a failed attempt to destroy the union there); the other was the less-reported, but equally ruthless, closing of its non-union equipment plant in Toronto (where the workers were never even presented with a phony ultimatum to cut their wages in half — the factory was simply closed). The expansion of resource investments, without a strategy to develop made-in-Canada supplies, inputs, and services, inevitably translates into a large and growing trade deficit in inputs. In mining equipment alone, that deficit now equals almost $8 billion per year.

Downstream, too, the expansion of raw petroleum production and export has not been matched by an expansion of Canadian capacity and production in value-added stages of petroleum upgrading, refining, and manufacturing (including petrochemicals). To the contrary, ten Canadian refineries have closed since 1990 (two since the turn of the century), and others (including remaining refineries in B.C., Quebec, and Newfoundland) risk a similar fate. Integrated foreign producers would rather ship Canadian production to their own refineries in the U.S. Industrial policy interventions in

earlier decades (led by figures such as Peter Lougheed) tried to foster Canadian value-added activity in petroleum refining and petrochemicals; these ideas seem downright radical by today's standards. In contrast, federal and provincial policy-makers today mostly ignore the importance of Canadian upgrading, refining, and petrochemical manufacturing, claiming these decisions are best left to the cost-minimizing decisions of private companies (even if those companies are foreign-owned, and have a private vested interest in processing Canadian crude in their own foreign facilities).[2] The result is an unsustainable flood of unprocessed exports (including raw bitumen) that has depressed prices in regional export markets. The flip side of the coin is growing Canadian imports of refined petroleum products: incredibly, Canadian refined product imports now almost equal our own exports of refined products (which have stagnated in the wake of refinery closures, a stark contrast to booming upstream production).

In short, as a major petroleum producer, Canada is squandering the opportunity to generate additional jobs, incomes, and exports from whatever amount of petroleum production we determine is appropriate (in light of environmental constraints). We need a pro-active strategy not just to closely manage resource extraction (for many reasons: including greenhouse gases, efficiency, macroeconomic stability, and economic inclusion), but also to maximize forward and backward linkages so that resource production can support (rather than undermine) broader economic development goals. "Less extraction and more value-added" is the motto that summarizes this effort. Applied to the petroleum industry, this approach would involve efforts to support Canadian machinery and service industries (and hence increase upstream inputs to resource projects), limit exports of raw petroleum, and mandate more made-in-Canada upgrading, refining, and petrochemical activity. This vision is consistent with the approaches that Canadian trade unionists and nationalists have taken to other resource industries in the past: such as demanding restrictions on exports of raw logs, in favour of Canadian wood manufacturing, or supporting requirements that fish caught in Canadian waters must be landed and processed in Canada, or requiring domestic milling and refining of minerals (like nickel and copper). The theme of maximizing Canadian value-added from our own resources, both to enhance the economic spin-offs from those resources, and to support the development of a broader range of economic capacities, is a progressive idea in Canada with a long pedigree — and continuing relevance.

Some environmental advocates worry we should not increase our economic dependence on natural resource industries at *any* stage of the value-

added chain. They are uncomfortable with efforts to maximize Canadian linkages (including secondary industry) related to resource production.

It is certainly true that the total scale of resource extraction needs to be limited in line with environmental constraints. In the case of climate change, this requires Canada to adopt meaningful, binding greenhouse gas targets, and then to manage all resource extraction in line with those targets. (In that context, we obviously cannot allow the tripling or more of total bitumen production currently imagined by the petroleum industry. But once we accept that some extraction will occur, and that the resulting activity will be economically important, then we should endeavour to extract the maximum possible employment, income, and fiscal benefits from whatever level of extraction is permitted. Harvesting necessary inputs from nature is the first step of all economic activity (including services). We cannot imagine an economy without resource industries, and we certainly don't want to simply "outsource" that work to other jurisdictions (following NIMBY logic). We must conserve our use of natural resources; pursue sustainable resource stewardship; and build an economy in which primary production plays an appropriate, controlled role.

Emphasizing the economic benefits from closer regulation of resource industries (including initiatives to strengthen upstream and downstream linkages) will also be important in building political support (including in resource-producing regions, and from workers in resource industries) for a stronger regulatory agenda, including strong GHG caps. That way, we can rebut the claims of petroleum lobbyists and others that regulating resource industries would destroy jobs, by highlighting the opportunities associated with more made-in-Canada inputs, refining, and manufacturing.

Arguing for "less extraction and more value-added" opens political space to win broader support for a progressive approach to managing our resources. Canada needs a national energy and environmental strategy: a progressive vision that would combine binding caps on greenhouse gas emissions, close management of future production, respect for the legal and economic rights of First Nations, limits on foreign investment and export of raw resources, and deliberate strategies to maximize Canadian value-added at all stages of the supply chain. Norway's successful experience shows it is possible to manage resource wealth in a manner which enhances, rather than undermines, long-run economic and social well-being (see Campbell, 2013). Building a political coalition to fight for and win closer regulations on resource extraction, and active measures to maximize the benefits of resource industries, will require careful dialogue, activism, and trust-build-

ing between unions, environmentalists, First Nations, energy consumers, and other stakeholders.

My work as a Canadian union economist has been strongly influenced by the work of Mel Watkins, and those he schooled in the staple theory. The worrisome structural U-turn which Canada's economy has experienced since the turn of the century, and the resulting economic and environmental consequences of our renewed staples dependence, convinces me that those teachings are as relevant and insightful as ever.

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Notes

1 According to the Organization for Economic Cooperation and Development, the PPP value of the Canadian dollar (reflecting the exchange rate that perfectly offsets nominal price differentials) is 81 cents (U.S.) (OECD, 2013).

2 One exception to that trend has been the Alberta government's fiscal support for the new Sturgeon upgrader and refinery, scheduled to be completed in 2017.

Part 4: Modern Applications

The Staple Theory and the Carbon Trap

Brendan Haley

IN MY SEARCH for insights into the opportunities and barriers to transitioning Canada towards a low-carbon economy, Mel Watkins' (1963) article, "A Staple Theory of Economic Growth," was one of the first places I looked.

The article is indispensable because Watkins undertook the ambitious endeavour of translating the wide-ranging and multi-disciplinary, but largely descriptive, work of Harold Innis and other Canadian and non-Canadian economic historians into a theoretical synthesis. The article contains the first written use of the term "staples trap" to describe the pitfall that resource-based economies can encounter.

Below, I intend to highlight the richness of Watkins' theory and the multiple factors that can produce the staples trap. I will then outline how I have applied this pattern in Canadian economic history to discuss Canada's current climate change problem as a "carbon trap." Finally, I will discuss if the policy agenda required to escape from the staples trap, as defined 50 years go by Watkins, conflicts with what is needed to escape the carbon trap.

Watkins' Rich Synthesis

"A Staple Theory of Economic Growth" was first introduced to me in an undergraduate economic history class. It was presented primarily as a theory

based on linkages (forward, backward, final demand) from the base staple to other sectors of the economy. This formulation invited the use of input-output models; weak linkages are indicative of the staples trap of over-dependence on resource exports.

However, Watkins' consideration of "spread effects" from a resource staple base also included supply-side factors, highlighting the influence of the staple on the nature of entrepreneurship (both private and governmental) and technological absorption and innovation. The consideration of these factors is true to the Innisian tradition, moving beyond physical and financial linkages, towards the influence of staples on institutions, values, and politics. I don't remember talking about this in my undergraduate class.

Watkins further opens up his analysis to consider shifts in the international environment, to which staple-based economies are particularly vulnerable. He notes that sustained development requires economic institutions that support the ability to shift production in the face of economic change. This introduces the value of resilience and adaptability and the need to consider factors such as knowledge assets and access to education, the nature of political power, and the ability to use and produce new technologies.

Throughout much of the article, Watkins is answering to the same criticism that is heard today: that the approach is an historic description and no longer relevant to the modern Canadian economy. Yet, to an economic historian, history matters. While the structure of the economy changes and evolves, it does so along a particular trajectory, which has a historic starting point. Even if the staple is long gone, it can still leave its "stamp" that influences subsequent developments.

Watkins is very careful not to claim that staples are the unifying theme in explaining the growth of the Canadian economy at all times, but he also makes the salient point that the most persistent staple biases relate to economic institutions and political values. Furthermore, an "inhibiting export mentality" and the undue political influence of staple exporters are key determinants of the staples trap.

This insight echoes throughout Canadian economic policy debates. Following the article, Watkins himself (1977), Kari Levitt (1970), The New Canadian Political Economy School (Drache and Clement 1985), and industrial policy advocates (Britton and Gilmour 1978) all discussed how Canada's lack of innovation, its "truncated" form of industrialization, and its dependence on foreign technology, could be traced back to its staple history. A country weak in innovation capabilities might easily rebound back towards resources as the safe space, as discussed by Stanford (2008).

All of this is to warn that in the Canadian context, leaving the free market to its own devices can easily recreate the staples trap of resource and technological dependence. Correspondingly, if we wish to enhance the transformative power of the Canadian economy and reduce its vulnerability to international shocks, Canadian policy makers need to develop political programs and economic institutions capable of opening up different trajectories.

Changing the trajectory would require interventions across the series of factors that influence the structural evolution of the economy. Since this is a problem that involves economic and political structures, interventions cannot be limited to "getting the prices right", but must also include policies to promote factors such as entrepreneurial activities, knowledge production and exchange, and the coordination of national and regional efforts.

A fundamental conundrum since Watkins wrote his article has been the challenge of developing an industrial or innovation policy aimed at increasing Canada's capacity for transformation, in the context of historically bestowed economic institutions and political interests promoting an "inhibiting export mentality."

The Carbon Trap

I have sought to gather some insights from Watkins' article and the rich history of Canadian political economy to explain Canada's particular climate policy problem (Haley 2011). I have argued that the staples trap peculiar to the 21st century is also a carbon trap, which prevents Canada from transforming towards a low-carbon economy. The carbon trap presents an ecological problem as well as an economic one, since it would be wise to plan for futures where the world might take action on climate change.

The pattern I gleaned from the works of Innis, Watkins, and others, was one of export-led development installing a series of structural rigidities. When faced with crisis and economic change, the strength of these rigidities led the economy back towards staple export dependence — instead of transformations towards new technological, economic, and ecological pathways.

The rigidities in the context of the carbon trap include the high fixed capital costs of bitumen sands development; the staples export mentality of the Conservative government and other political and business leaders; regional political challenges; and the political interest of the bitumen industry. The vulnerability of bitumen as a staple product to international market shifts includes its exposure to changes in international climate policy. True to the staple trap pattern, instead of reacting to international uncertainty and vul-

nerability by diversifying towards low-carbon technologies, political and industrial leaders react by exacerbating the rigidities even further by calling for the build-out of new infrastructure (such as pipelines) and weakening environmental regulation and initiatives.

The carbon trap certainly relates to the chance geographic circumstance of Canada sitting on top of a highly carbon-intensive resource — at the very time when the world needs to reduce carbon emissions. Pulling from Watkins' insights, we can also add that the institutional and political stamps left by previous staple periods contribute to the durability of the trap.

Approaches to Escape from the Traps

Of course the staples trap is not inevitable, and neither is the carbon trap. Both identify a policy problem and provide a warning. Watkins' article inspired many policy initiatives to reduce Canada's vulnerability to the trap and build a more balanced economic structure. Today we can ask if the policy agenda to escape from the staple trap, as defined 50 years ago by Watkins, conflicts with what is needed to escape from the carbon trap. I contend that the answer depends on what you decide to pull out of Watkins' original article.

If the staple trap is viewed primarily as a problem of weak industrial linkages, you can escape from it by strengthening these linkages. In the case of the bitumen sands you can strengthen backward linkages by building transport systems (e.g. pipelines) and through the use of domestic machinery and equipment. Forward linkages can be enhanced through initiatives to "add value", such as expanded upgrading and refining.

The problem is that "strengthening" these linkages could exacerbate the rigidities that lead to the carbon trap and sink Canada even further into a fossil fuel pathway and away from a green innovation trajectory. Also, a narrow focus on these linkages only makes sense if we assume that nothing changes in the international economy: a simplifying assumption that Watkins made to discuss the demand-side linkages, but subsequently relaxed to create a "historically relevant" theory.

The interpretation of the staples trap which I believe is truer to the article, and to Watkins' later work, is that the problem fundamentally concerns the capacity of the national economy to transform towards new economic structures or paradigms. This reading highlights the historical-evolutionary and political economy aspects of the article. This interpretation of the staples trap directs a policy agenda towards the encouragement of alternative

entrepreneurial activities, the creation of new economic institutions, and political values aimed at building economic diversity in order to open up new pathways towards desirable futures. In the context of the climate problem, these pathways must be based on deep greenhouse gas emission reductions.

Of course the latter policy agenda does not necessarily preclude activities such as upgrading and use of domestic machinery along the way towards a low-carbon economy. But a change in political understandings, economic institutions, and an economic strategy would have to be first and foremost. Then a sectoral strategy could be developed within the bitumen sands that would encourage linkages if they could help mould Canada's economic structure towards low-carbon pathways. The fundamental policy problem is again the need for a Canadian innovation policy, this time a green one.

Like any concept, the staples trap has been interpreted in many ways. In an article as ambitious and wide-ranging as "A Staples Theory of Economic Growth," it is possible to pull out different facets. In my discussion, I have tried to argue that the institutional, evolutionary, and political insights within the article are critical for us to escape today's carbon trap and that an overly static and narrow understanding of linkages can be dangerous.

Fifty years on, Watkins' article still provides insight and clues into what we should do today. It deserves to be read and re-read.

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LNG: BC's Quest for a New Staple Industry

Marc Lee

IN BRITISH COLUMBIA, the top economic priority of the provincial government is the development of a new liquified natural gas (LNG) industry. The recently re-elected Liberals, led by Premier Christy Clark, made LNG the centrepiece of their election platform, claiming that the resulting boom would be worth $1 trillion, create 75,000 direct jobs, and leave the province debt-free and without a sales tax (free puppies may be involved as well). It's very possible this vision of a new staple industry will "vaporize" (pun intended), due to the tough economics of LNG and the cumulative environmental impacts it would entail. But nevertheless it already seems to have been a political winner: relentless commitment to resource development was at least part of the reason Clark's Liberals defied a 20 point deficit in the polls before the election campaign, to achieve victory over a shell-shocked NDP.

Post-election, the BC Liberals have now created an entire ministry dedicated to getting LNG deals signed. There are as many as 12 proposed projects for LNG terminals, most of which would be located around the north coast city of Kitimat — although the provincial government expectation is that only 3 to 5 terminals would eventually be built. That said, the grand total of projects underway so far is zero, and it's possible no LNG facility will ever get off the ground. Each is a multi-billion investment that requires a firm supply

of gas from the Northeast of BC (a doubling to tripling of production, plus new pipelines to the coast), and multi-decade contracts to Asian buyers.

Securing those long-term contracts is proving to be difficult given the volatile gas commodity landscape. Going back a decade, it was supposedly just a matter of time before BC (and everyone else) ran out of natural gas. The advent of hydraulic fracturing and horizontal drilling has been a game changer, making available abundant new sources of reserves. (In BC, this is mostly shale gas trapped in rock a couple kilometres below the surface.) Gas production in BC and across North America ramped up, and before long prices had fallen dramatically. BC exports most (85%) of its gas via pipeline to Alberta (where much is used to fuel tar sands production) and to the United States. The lure of LNG is that it would supposedly tap thirsty new Asian markets via cross-ocean exports, achieving a substantial mark-up over depressed prices in the North American market. But others are in this game as well: Australia is making big new investments in export capacity; and Qatar, Malaysia and Indonesia already are in the big leagues. Even the U.S. is now looking at LNG exports. Why would Japan or China lock in BC supplies for three decades, when prices may drop, or new developments may change the energy outlook?

So BC is not alone, and if anything is late to enter this game. Its strategy fits with the classic pattern of Canadian staples development: seek foreign investment to tap our resources for export markets, secure jobs and income for Canadian workers, and use royalty and corporate tax revenue to help pay for public services (in lieu of personal taxation). The two giants at BC's LNG table are Shell and Chevron, with combined global profits in 2011 worth more than a quarter of BC's GDP; Shell alone has annual revenues more than double BC's GDP. To get the LNG industry off the ground, BC is going to be in some tough negotiations. Clark in the election campaign promised a super-tax on LNG profits to build an Alberta-style Prosperity Fund. I'm betting the industry's negotiating position is stronger, and Clark would cave in order to get a deal signed.

In the early days of LNG, the Haisla First Nation near Kitimat agreed to be partners is a small LNG development, predicated on powering the facility with their own renewable energy (wind and hydro) sources. The scope creep of current talks risks leaving the Haisla with the short stick in the face of bigger proposals. For BC, getting in bed with Shell also comes with the company's dubious distinction of being the world's number one corporate criminal in 2013 according to American NGO, Global Exchange ("based on issues like unlivable working conditions, corporate seizures of indigen-

ous lands, and contaminating the environment"). Chevron did not make the top ten, but it is fair to say it's got game when it comes to human rights abuses. For those concerned that Canada is becoming a petro-state, this is deeply troubling.

The path to LNG riches has some other BC-specific obstacles. Clark's predecessor, Gordon Campbell, brought in a range of climate action policies in 2007–08, including the province's well-regarded carbon tax, and legislated greenhouse gas reduction targets. While some insider champions of LNG do not care about climate change, the province is wrestling with its own cognitive dissonance: how to stick to past commitments to reduce greenhouse gases, while substantially growing production of a key fossil fuel. BC's media savvy Premier now talks about "the cleanest natural gas" or "cleanest LNG" in the world.

The problem is the math: in order to move ahead with LNG projects while still meeting the government's own GHG targets, every other sector of the BC economy would need to make radical and unprecedented reductions in its emissions. One option under examination is purchasing carbon offsets, but this could be expensive and BC's offset regime has been much criticized. Another issue is accounting conventions that do not count embodied GHG emissions in exports (instead, they count in the importing country's GHG inventory). On a lifecycle basis, total GHG emissions into the air that originated below ground in BC would double or even triple, depending on the number of LNG plants. It would be the emissions equivalent of putting between 24 to 64 million cars on the roads of the world.

Related to, and compounding this, is that liquifying gas for export is itself massively energy intensive. BC's 2010 Energy Plan committed to 93% of electricity production in the province coming from clean or renewable sources. Were it to be met by new renewable supply, BC Hydro modelled an increase in demand from three LNG equivalent to one-third of its total current production. Renewables are more expensive, and existing commitments to private power producers for new supply are already creating pressure for price hikes. To get around this, the BC government conveniently declared that burning natural gas for LNG production would be considered to be clean energy.

Upstream, the environmental problems only get worse. Huge volumes of water, plus sand and chemicals, are needed to engage in fracking activities, typically rendering the water unfit for any other purpose, effectively taking it out of the water cycle. Local landowners and First Nations are rightly concerned about leakages of gas and chemicals into their water supplies — the

fracking industry has become synonymous with images of ranchers lighting their tap water on fire — not to mention small earthquakes. In terms of GHG emissions, field studies have shown high leakage rates of methane (the main component of natural gas). A much more potent greenhouse gas than carbon dioxide, methane leakages are disproving any claims that natural gas is the cleanest burning of the fossil fuels. Field research in BC is lacking, but if U.S. results hold then BC gas would be worse in terms of its GHG emission profile than dirty old coal.

These problems might seem to strike up a classic jobs versus environment problem for LNG, except for one thing: there are very few jobs. The lofty numbers being floated by government are simply not credible. At its inception, BC's Natural Gas Strategy (based at the time on 3 LNG plants) estimated about 800 permanent jobs and up to 9000 jobs during construction. This is a very capital intensive industry, and even with five LNG plants on stream, modelling suggested about 2,500 permanent jobs (this assumed workers would otherwise be unemployed, as these models often do). And it is reasonable to assume that additional upstream jobs from fracking would lead to another 2,000 to 3,000 jobs. But these fall way short of public claims being made by the government, which originally claimed an unsupported 40,000 new jobs in an infographic. Then that number was inflated to 75,000 permanent jobs over 5 LNG plants on the basis of a consultant's report (which is loaded with caveats that distance itself from its own numbers).

On the other hand, Shell has commented that it will take *a*n Ikea approach to LNG plant construction, with plans to "ship large pre-built modules to Kitimat to reduce the number of construction workers needed." Nor is it clear that BC workers will get the work available: pipeline building crews move around the continent to where the work is, and the growing reliance in BC and Alberta on temporary foreign workers is cause for concern.

Far from being a description solely of Canadian economic history, Mel Watkins' staples theory of economic growth clearly applies to this 21st century BC story. Watkins' critique of multinational corporations and foreign ownership, and more recently his concerns about climate change, are also relevant. The resource development mindset is particularly strong in Western Canada, deeply institutionalized in government and business circles. They understand well the concept of staples — but they are not concerned at all about the pitfall of a "staples trap."

The Panacea: *Panax Quinquefolius* and the Mirage of the Extractive Economy

Éric Pineault

It will fall like ginseng.

A popular saying in New France, circa 1750.

THE PANACEA. *Panax quinquefolius*: millions of Chinese wanted it, they couldn't live without it, and they were willing to pay big dollars for a few kilos. At the time, it was abundant in our country. The setting was New France in the 1720s. The Jesuits could no longer keep it a secret: they had lost control of the ocean-going trade in American ginseng root *(Panax quinquefolius)* to merchants in the colony. Everyone was getting into the business of harvesting this small perennial plant which grew abundantly in the shade of St. Lawrence Valley maple trees. The extraction and export of this resource was so profitable that its discovery "at the time produced as much intense emotion and greed as the discovery of gold mines in California much later. Inhabitants, finding it more profitable to hunt for ginseng than to grow wheat, abandoned their fields for the woods," lamented Brother Marie-Victorin in the 1964 edition of *La flore laurentienne*.

During the ginseng boom years, price fluctuations and Chinese demand for the plant had a major social and economic impact on New France. When prices were high, the fields were deserted as people took to the maple groves in search of the roots that they hoped to exchange for hard cash. When prices crashed, the merchant's ships lay in harbour as the stockpiles of roots rotted in warehouses in Ville-Marie or Quebec City and inhabitants went back to their wheat harvests. In the meantime, the ginseng grew back anew in the shade of the maples. Considering that it takes three years for a seedling to flower and produce seeds, it is easy to see how quickly the ginseng population was decimated by over-harvesting. Even today, it is a threatened species in Quebec. And this is how, in less than a century, one of our first experiments with an extractive and primarized economy came to an end.

The ginseng episode demonstrates the risks facing any country that allows its economy to become primarized by focusing on the extraction and export of natural resources. Such an economy holds the promise of resource revenues that are the stuff of dreams for workers and capitalists alike, with easy money to be made by selling, very far away, a product that has undergone little or no processing. But this economy also entails the overexploitation of resources, increasing distance from extraction sites due to depletion of the resource, dependence on foreign markets, revenue volatility, and the diversion of labour and investment from domestic sectors to the export sector. The history of Quebec (like Canada), from colonial times to the present, is marked by several episodes of extractive economies: beaver pelts in the Pays-d'en-Haut, cod fishing in the Gulf of St. Lawrence, soft-wood lumber in Lower Canada, and, closer to home, iron ore at one cent per tonne in the Côte-Nord region, boreal forest spruce transformed into newsprint for the *New York Times*, gold and nickel in Abitibi, and now the latest potential additions — oil and shale gas from the Gulf of the St. Lawrence and the St. Lawrence Valley. The highs and lows of staples extraction have been documented by several historians. The great Harold Innis is credited with the most comprehensive study of the political economics of the "primarization" of economies and societies. Then Mel Watkins developed his work, drawing out the policy lessons and alternatives.

Basic Theory of "Primarization"

Innis viewed "primarized" economies — that is, economies largely dependent on the extraction of one or more raw materials — mainly as a form of integration of a society into the global economy. According to Innis, a society

becomes dependent on primary products through its interaction with a more powerful economy that casts it in the role of producer of a primary product. The trading partner requires that product in large quantities, but with minimal processing. The mass extraction of the primary product is thus reliant on external demand, usually from another country which is experiencing rapid industrialization (examples include 18th- and 19th-century England, early 20th-century United States, or, more recently, Asia). It thus can be seen as a form of international division of labour between two economies, one subordinate and the other dominant, that then become more interdependent through the extraction and export of the staple in question. The growth of the former economy is driven by the extraction and exporting of a primary commodity from which it derives revenue, while the latter's growth is driven (in part) by the absorption and transformation of this product as part of its industrial development. The stronger, more intense and more rapid this industrial development, the higher the demand for and price of the resources supplied by the primarized economy, and the higher the revenues it derives from them.

It is this interdependence that inaugurates the "primarization" of the subordinate economy, which will then tend to over-invest in the revenue-generating extraction chain and under-invest in the processing of the primary product. As a result, the primarized economy pours a great deal of energy, resources and work into organizing the mass extraction, transportation and exporting of raw materials, while devoting very little effort to the development of its own manufacturing sector.

A political economy approach such as that of Innis is always interested in the gaps between the wealthy (haves) and the workers (have-nots), between capitalists and employees, in an economy. But no matter how subordinate, every economy has its economic elite, its entrepreneurial class, capitalists and owners. Within a primarized economy, the configuration of the economic elite is based on three groups active in the extraction chain: those who control extraction, those who control transportation and export of the primary product and, finally, the financiers who specialize in bulk trade in raw materials and the financing of extraction infrastructure. Extractors, exporters and financiers all share the profit generated by extraction. They also share this revenue, albeit involuntarily, with the government, which is a major investor in the infrastructure (roads, energy, storage) necessary for an extractive economy, whose development in turn is an integral part of state policy.

Opposed to but dependent on this emerging elite are the communities of workers specializing in the extraction of resources. They have been

moved closer to the extraction sites, often at a great distance from more structured, populated centres (and often from their own familes). The way of life of these "deterritorialized" communities also causes them to become dependent on extraction.

In fact, according to Innis, society as a whole eventually becomes dependent on the primarized economy and extraction revenues as a result of three main factors. First, a class alliance emerges around extraction — between extraction and transportation industrialists, and between financiers and the political elite, all of whom derive their prestige, their wealth and their power from this economy. This alliance also rallies the extraction workers, despite their mistrust of their employers. This alliance is not just based on economic interests; it is based, more broadly, on its entire vision of the world, nature, history and its place in history that become imbued with an extractivist ideology and culture. After all, a large part of Quebec's folklore is rooted in this staples mindset, which is currently undergoing somewhat of a revival, as reflected in a certain "neotraditional" popular culture.

In this context, the government eventually grows so dependent on extraction revenues, no matter how meagre, that it winds up feeding off extraction activities and mobilizing the resulting royalties and taxes to finance public spending. Thus, investments in extraction infrastructure, the massive transfer of development rights to private interests and the establishment of worker communities at isolated extraction sites are all held up as part of a vast mobilizing project by the powers that be, who suddenly take on the air of great builders and visionaries.

Finally, the extraction dynamic becomes self-perpetuating. While the primarized economy initially develops around products that are relatively easy and cheap to access, the rapid depletion of these sources creates a spiral of exploitation that becomes more and more expensive — farther away, deeper underground, more impure, more scarce. But because the capital is already invested in extractive processes, because policies are adapted to the exploitation of these resources, and because the workers are trained in this mode of extraction, it is easier to continue down this road, to go farther and deeper, rather than changing direction.

Dependence intensifies as the scarcity of the resource drives up its price, providing an additional incentive to extract higher-cost resources. This is the ecological paradox of extractivisim: the scarcer a resource becomes, the more its cost rises, the more profitable it is to exploit the least productive deposits and sources, right up to the last ounce, the last beaver, the last cod or the last spruce. The reason is that, ultimately, a primarized economy is

essentially an economy determined by external forces; its development depends on export markets, it creates value not by processing commodities, but by ensuring their widest possible circulation. The global industry is dependent on economic cycles over which it has no control. But when prices and demand increase, as they did in the ginseng era, the most costly extraction projects — those whose success is the least certain — suddenly appear feasible...

The Re-Primarization of the Quebec Economy

While Quebec's economy gradually weaned itself off its dependence on the extractive sector over the course of the 20th century, a number of forces, both here and elsewhere, are currently conspiring to bring about a re-primarization of our economy. We must remember that the economic institutions of the Quiet Revolution, Hydro-Québec, the Caisse de dépôt et placement, as well as a number of public corporations, are the culmination of the long process by which Quebec became an industrial economy. Becoming a more diversified producer of goods and services was seen as a means of achieving autonomy for the domestic market. In this context, the natural resources extraction sector, while still important, was put to work to support the development of this industrial economy, and corresponding national vision. The best example of this mentality is the development of hydro-electric energy by a Crown corporation whose mandate was to extract a renewable, relatively cheap source of energy from the vast rivers and watersheds of Northern Quebec in order to meet the needs of households, institutions and manufacturing companies. This is the complete opposite of the primarized model. Thus, concerns should have been raised when we began to justify the construction of vast hydro-electric dams with a view to the direct export of primary energy to the American market (and hence to generate revenue for the Quebec government).

As we have learned in Quebec, perhaps more slowly than elsewhere in North America, this model of industrial development focused on domestic demand was dismantled in the context of the policies of neoliberal openness during the 1980s and, even more so, the 1990s. The ensuing outward orientation of our economy laid the groundwork for the current forces of re-primarization.

What do we mean when we talk of "re-primarization"? It cannot be said that the primary sector has again become the driver of economic growth in Quebec. Neither the mining nor the oil industry, and even less the forestry

or fisheries industries, have the same impact today as they had prior to the 20th century, despite the fact that entire regions still depend on their existence. Re-primarization is not a state of affairs, but rather an economic project, idea and culture that has the support of a significant segment of our economic and political elite. The project entails directing government resources to the development of extraction activities in a context of sluggish growth in other sectors of the economy. Goods and services economies are stagnating in both North America and Europe, and this stagnation is not solely the result of the latest crisis. However, the economic crisis, and particularly the austerity policies that have emerged in response to it, have trapped these economies in a vicious cycle of weak growth.

In the meantime, China, along with a handful of other so-called "emerging" economies, have largely benefitted from the opening up of trade and globalization, which have spurred rapid industrial growth. Their hunger for raw materials and energy seems insatiable, whether it be oil, coal, iron, zinc, rare earth metals, arable lands, paper, lumber, titanium, gold, silver, uranium. This is looked upon as a new panacea by those whose hinterland and underground are rich in these resources. Foreign investors are knocking on our door, fly-in/fly-out wages are very high, and resource royalties are seen as a way to balance public accounts; the attraction of re-primarization is simply too strong.

In short, after two decades of crisis, industrial restructuring, job loss, failure of economic recovery policies, industrial experiments and innovation clusters of every kind (including biotech, aluminium, fashion, pharmaceuticals, video games, hedge funds and other "new economy" industries), it seems we have finally found a development project that is simple and unifying: extract everything we can find, and feed it to the Chinese and their emerging avatars. Thus, re-primarization can also be seen as responding to the demand of an extractivist elite. From their kiosks at the Natural Resources Fair, from their platform at the Forum on Mining Royalties, from the chambers of commerce across Canada, to the halls of the National Assembly, this elite repeats the same refrain over and over: "Help us restore growth by developing the infrastructure necessary for a new wave of natural resource development projects." Following the same old economic logic studied by Innis, this implies extracting as much as possible, processing as little as possible, and exporting as much and as far as possible — because the value of the model resides precisely in expanding the circuit. "Help us establish new communities of captive and deterritorialized workers. Finance the construction of resource transportation and export infrastructure, and,

finally, turn a blind eye to the environmental damage and risks of this type of development. Especially considering that, in the current context, this is the only sector with any potential for growth, development and increased revenues for the state!"

As long as the interdependence in the division of work between extractor and user-processor persists, or until some major innovation comes along and revolutionizes extraction methods, or until a substitute for raw materials consigns it to oblivion, this staples model based on relative scarcity will continue to perpetuate the cycle of resource extraction until there are no more resources left to extract. This paradox of the commodities market has been exposed notably by environmental economists such as Dennis Meadows, author of, *The Limits of Growth*: the scarcer a resource becomes, the closer it gets to its point of depletion (relative or absolute), the more prices provide an incentive to extract farther and deeper, until the collapse of the stock (whether ginseng, beavers, cod, spruce or, soon, oil) is completed. If we do not free ourselves from the extractivist mentality that conditions our relationship to our own development, our re-primarized economy is doomed to fall… like ginseng.

A version of this commentary originally appeared in French at revueliberte.ca.

Staples Theory: Its Gendered Nature

Marjorie Griffin Cohen

FEMINISM WAS THE unlikely route for my contact with the staples theory. I say 'unlikely' because staples development analysis has a structural amnesia to gendered issues. Still, understanding the distinct ways that Canada developed had significant implications for the atypical way labour and gender were configured in the historical development process.

Interest in women's role in economic development had been in abeyance for a long time after the British feminists early in the 20th century became focused on women's past — specifically women's contributions to the 18th century industrial revolution. In the early analysis of industrialization, women's work was understood (both by feminists and others) to be integral to industrial development in Europe, primarily because women were so very central to the proto-industrial stage of family manufacturing[1], but also because of their dominance in the early factory systems.[2]

Until the beginning of development literature (dealing with underdevelopment in poor countries) the British understanding of capitalist development was more or less the general understanding of industrial revolutions. So too were the labour and family configurations associated with them. As feminism was gaining a tiny toehold in universities in Canada in the 1970s and 80s, those of us exploring how to teach the Canadian economic past

from a gendered perspective had almost no material to use. The research in Canada and the U.S. simply had not yet been done, so the only written scholarly work available related to an earlier literature of what had happened in England and Europe. This clearly did not explain women's role in development in Canada — in any way whatsoever. At that time the push to have Canadian subjects taught in Canadian universities (spearheaded by Robin Matthews and Mel Watkins) made me realize I could not focus on European women, but absolutely had to find out how women figured in the shaping of Canada.[3]

This is where Mel Watkin's work on staples development comes in. I was new to Canada and since I came from the U.S., knew absolutely nothing about Canadian history, much less its economic development. Someone directed me to Mel's work on the staples theory. It immediately made sense that such an enormous country with a tiny population that was focused on exporting mostly primary products should have a distinct economic growth pattern. I read everyone Mel referred to in the piece, including Innis and Mackintosh. Mackintosh's cheerful approach, that staples export would be the positive path to more diversified development, contrasted starkly with that of Innis whose darker analysis of the significance of the characteristics of the *commodity itself* and the tendency toward wildly fluctuating economic activity seemed a much more realistic version of what actually occurred. Mel's theorizing applied the concept of linkages (backward, forward, final demand linkages) to the Canadian case. What became obvious through Mel's analysis is that what mattered most was whether these linkages were reaped within Canada or elsewhere, and how public policy could make the difference in taming the volatility of a staples economy: to the extent that public policy submits to the 'boom and bust psychology' of staples export development, the more unstable the economy was likely to be. Mel was clear that growth and economic instability would be less at the mercy of destiny if planning is accomplished to strengthen linkages.

At first I was interested in seeing how women 'fit into' Canadian economic development by examining the nature of women's labour in both staples production and the agricultural/subsistence sector. The first two excellent and serious studies dealing with women in staple development were focused on aboriginal women in the fur trade. These were Sylvia Van Kirk's book, *Many Tender Ties*, and Jennifer Brown's book, *Strangers in the Blood*. Both were published in 1980 and showed how central aboriginal women were to the success of the fur trade, regarding both market-oriented production and re-production of the fur trade labour force (or maintaining 'social

reproduction,' as it is now termed). Around this time H. Clare Pentland's book on *Capital and Labour in Canada 1650–1860* came out, and it was the first to focus on the significance of labour organization in a staples economy, where finding an adequate labour supply was a monumentally difficult issue. Pentland referred to early labour productive relations as 'patriarchal' because of the need for the employer to assume the reproductive overhead of the workers, even when there was relatively little work, just in order to keep people alive.

But understanding how the population grew and maintained itself during periods of violent economic fluctuations and how the economy grew despite these wild swings meant not just seeing how women 'fit in' to an already understood growth pattern. Rather, I found, including an analysis of what most people were doing changed ideas about how capital accumulation occurred in the early periods.

There were clues all over the place about how to understand labour and women's role in early development, particularly if one examined early records with the intent of specifically looking for these issues. Ideas from other scholars also provided other methods of examining the staple's relationship to the wider economy. These included Vernon Fowke, who was interested in disputing the sense that pre-industrial agriculturalists were primarily self-sufficient, but instead were initially and continuously reliant on an exchange and monetary economy. In Quebec Louise Dechene and Jean Hamelin pointed out that even in the earliest periods only a small proportion of labour was directly involved in the staple-exporting sector, which meant that other forms of economic activity had been dominant. And there were the accounts of women themselves that could be read, both to understand what types of work they did and how they and the men in their families understood the significance of their work.[4]

By looking at what most people were doing and including women's labour in the mix, their significance in the whole project of capital accumulation became more apparent. The extraordinary volatility of the staple economy was a starting point for understanding the nature of productive relations, both those in the market and those within the family. It became obvious, as I learned more, that patriarchal productive relations were just as significant in capital accumulation as were capitalist productive relations. Ultimately I wrote a book on this issue, using the staple thesis as my starting point, with the intent of showing how non-market productive relations could be crucial to economic growth and development.[5] Also, understanding the gendered nature of economic growth in Canada could add a different take

on the shape of staples development and how its volatility was managed within households.

As I said initially, Mel's article on the staples theory was immensely influential to my thinking about the gender order in Canada in its earlier periods. But some assertions seem worth questioning now (in hindsight). Two points that Mel mentions as being important for development are worthy of note. First is the idea that Canada had a favourable 'land/man' ratio; second is the notion that because Canada was largely a settler society, it did not have inhibiting traditions of the sort that restricted development elsewhere. With labour issues always so very significant because of the low population, it would seem to me that this 'land/man ratio' was actually a negative factor. So much land, with so few people, meant that domestic markets were very slow to develop. Also, while the gender order was in many ways shaped by the special circumstances of Canada's geography and staple exports, importing labour was necessary to solve the labour problem. Each wave of European immigrants brought a reinforcement of very traditional gendered relationships. And these tended to retard the various ways that women had been integrated into the staples exporting economy. The effect of English's women's immigration on aboriginal women in the fur trade was most obvious, but so too were the traditions from other waves of immigrations from elsewhere in Britain and Europe.

The significance of export staples to understanding what is most important for the economy in Canada has had resurgence with new developments in the energy industry. I live in BC, and here the reliance on staples exports is well entrenched as part of the collective unconscious of policy makers. For example, I recently attended a high-level one-day conference assessing future economic directions in BC. The general sense was that the priority was to generate wealth through gas development and exports (in the form of liquefied natural gas), assumed by most to be a precondition for allocating funds to the things people need. It seems odd, but there exists an embedded idea that wealth is only created through resources — and everything else derives from that. At no point is there recognition of the huge risks of relying on one export staple for future economic success.

Mel Watkins' "A Staple Theory of Economic Growth" was an inspiration to many of us who used it as a basis for further research into Canada's economic nature. It inspired subsequent researchers and students, and is a great article to use in teaching. It thoroughly engages students in a way that nothing else on Canadian economic history can do: they appreciate its clarity and immediately see its relevance to the economy today. The staples

theory is as alive and relevant in Canada now, as it was when Mel wrote it fifty years ago. If only those in charge of the economy would heed the analysis that Mel and others gave us, they would be much more conscious of the risks inherent in a staples-dependent approach to growth. Those who design economic policy for governments should have a wider perspective than relying on the deepening exploitation of resources. Attention needs to shift to economic activity that meets the needs of people within this country.

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Notes

1 This is also referred to as the 'putting-out' system where a family manufactured clothing and other items from material provided by an industrialist. See, for example, Medick 1976.

2 See, for example Pinchbeck 1930, Smelser 1959, Collier 1964, Engels 1845.

3 The dominance of English and American academics in the social sciences in particular had hindered the development of a vigorous research of Canadian issues. This was corrected, as universities were required to offer jobs to qualified Canadians first. Unfortunately, this law, which was so hard-won, was changed early in the 21st century.

4 See for example Dunlop 1889, Jameson 1838, Moodie 1855, Rose 1911, Traill 1855.

5 This book is *Women's Work, Markets, and Economic Development in Nineteenth-Century Ontario*. It was primarily the work I had done for my Ph.D. thesis.

Re-reading Staples Theory in Light of Current Trade and Development Theory

Dan Ciuriak

A STRICT READING of Melville Watkins' 1963 article, "A Staple Theory of Economic Growth" (Watkins, 1963) suggests that its relevance is entirely to history rather than to the modern world. As he writes: "The staple theory is presented here not as a general theory of economic growth, nor even a general theory about the growth of export-oriented economies, but rather as applicable to the *atypical case of the new country*." (143; emphasis added) The "new country" is an "empty land" that is being settled by newcomers. Such places of course do not exist (and indeed never did exist in reality).[1]

In this comment, I restate the theory in an updated context and discuss its relevance to Canada's situation today. As a device I imagine the development of a brand new staple, and think through its implications in light of Watkins' analysis.

Consider an existing small, open economy with an established palette of goods and services. A technological breakthrough allows the exploitation of previously unusable land to produce a new staple — in other words,

a new and large extensive margin opens up.[2] Let's use switchgrass for biofuel production in Canada's west to concretize the thought.[3] Due to breakthroughs in, say, genome sequencing and bioinformatics, it becomes possible to genetically modify switchgrass to generate a substantially higher biomass potential per acre; at the same time breakthroughs in microbial conversion of cellulose to ethanol make it possible to derive substantially higher net yields of ethanol for biofuel use per unit of input. A new and major staple is introduced with large export potential due to expanded ethanol content requirements in EU and U.S. biofuel regulations. At the same time, the economy's industrial sector faces new potential in emerging products such as green energy technology (solar, batteries, etc.) driven by the same broad societal objective — clean energy. We now pick up the story in Watkins' article.

Watkins sets out in rather general terms a multi-sector general equilibrium model with three factors of production: land, labour and capital. Since comparative advantage for the land-intensive economy lies in land-intensive production, namely staples, the expansion of available usable land shifts the economy's comparative advantage towards land and thus to staples. The further economic development of our economy then is a process of diversification based on exploiting the abundant factor through exporting which generates a "spread effect". The latter effect can be readily identified with the "spending effect" formulated by Corden and Neary (1982) in their exposition of "Dutch Disease": income earned from export of a resource (staple) drives demand for and production of other products, including inputs to the staple sector and downstream production enabled by the staple production that is not directly exported. Watkins also mentions that the effectiveness of domestic entrepreneurship depends on the supply of capital and labour. This hints at the resource movement effect in Corden and Neary, although there is no clear reference to crowding out of other tradables. Overall, the staples theory can be characterized as a proto-Dutch Disease "resource curse" theory, albeit with an incomplete exposition of the implications for other tradables and non-tradables.[4]

In our updated economy, the emergence of comparative advantage in switchgrass/biofuels would tilt the playing field away from other green energy technology. While going with comparative advantage results in unambiguous welfare gains for the economy in a static context, there may be something about the character of the staple that makes it less desirable in a longer-term growth context. Watkins emphasizes the importance of the character of the staple and the dynamics that its production induces, in-

cluding in terms of exposing the economy to the boom/bust nature of commodities, influencing the quality of labour, and the scope for upstream and downstream linkages. However, while there is mention that the staple production will be subject to decreasing returns, the fact that the staples theory focuses only on the character of the staple and not on the character of the non-staple (because of the "new economy" context for which it was formulated), there is no hint of external economies or increasing returns in other sectors that would more powerfully make the case for policy to support the development of such sectors (in our case, alternative green energy technology). Interestingly, Watkins mentions Marshall McLuhan but not Alfred Marshall, who introduced the idea of industrial districts driven by learning externalities!

Watkins also sketches out a growth model. Factor markets are open and factors are mobile; accordingly, both capital and labour are free to flow into or out of the economy. Moreover, foreign direct investment is also free of restrictions and thus inflows bring technology and foreign entrepreneurship. Nonetheless, the pace of growth is dictated by the pace of exports of the staple(s). In part, this reflects the fact that most technology is imported and domestic technological advance is thus dependent on export earnings (domestic innovation is allowed for but its extent is not explained; there is a suggestion that it is mainly refinement of imported technology). In part, however, it reflects the influence of the staple itself on the nature of institutions in the economy.

The endogeneity of the quality of institutions to the nature of the staple anticipates the recent emphasis on the importance of the quality of institutions in economic growth and the tendency of rent-heavy economies to be plagued by corruption. The attractiveness of these insights to explaining the sharply divergent development trajectories in the resource-poor economies of East Asia versus the resource-dependent economies in Africa and Latin America is clear. However, the implications of this for our updated land-intensive economy would appear to be more subtle.

One imagines that the switchgrass revolution would generate an ongoing innovation dynamic in, say, Saskatoon's biotech cluster. However, why an economy that is open to global capital markets should be constrained by export earnings, if there are good growth opportunities elsewhere, is left unclear by the staples theory. One needs additional Dutch Disease-type arguments to explain the crowding out of the innovation-intensive cluster in alternative green technology. The latter sector might have potentially much larger longer-run gains due to economies of scale, the development of re-

lated products based on the engineering learning-by-doing, and the "learning-by-exporting" effects that technology exporters would gain from interaction with sophisticated global production chains.[5]

Perhaps most importantly, as the modern firm-level trade literature emphasizes, the green technology firms that become exporters would be the more productive firms in their sector and their entry into export markets would be associated with a number of productivity-enhancing effects. These effects would include internal economies from adoption of process technology suited for global mass markets and from post-export-market-entry scale of production, but also industry-level productivity gains as market share is transferred from the lower productivity firms to the faster-growing high productivity firms.[6] These new exporter-starters would be Canada's next generation Bombardiers and Blackberrys. This is perhaps the most important distinction between exploitation of a land-based extensive margin versus a technology/firm-based extensive margin, as it provides an insight into why land-rich economies might tend to grow more slowly in the longer-run than land-poor economies.

Watkins also touches on development theory. Interestingly, he articulates the idea that development is a process of *diversification* rather than *specialization* according to comparative advantage as an economy integrates globally — an idea that is nowadays generally credited to Imbs and Wacziarg (2003). However, Watkins' dismisses the infant industry argument (in 1963 already, well before the economics profession had abandoned it!) without discussion. In particular, there is no comment on the role of the MacDonald tariff on Canadian inter-provincial trade or the role of the McKinley tariff on the New England economy in the late 1800s and early 1900s when New England took over from Manchester the title of the "workshop of the world" (see, e.g., Philadelphia's period of industrial pre-eminence around 1880–1920). As a result, there is no obvious policy hook regarding what to do about reliance on staples.

* * *

Ultimately, Watkins' (1963) theoretical development of the staples thesis had little traction in influencing mainstream economic growth theories. The reason may be, as suggested by Krugman (1995; 27), that "...the influence of ideas that have not been embalmed in models soon decays." So while Watkins was able to think through in plain English issues such as the general equilibrium implications of staples exports, the implications of commodity price booms and busts as well as of a longer-term decline in the terms of trade, and the implications for labour markets (and by extension for outward migration) if the

growth impetus from staples exports was insufficient to meet the job needs implied by natural population increase (assumed to be exogenous), the inferences lacked staying power because they were not embalmed in mathematics.

But as we revisit Watkins and recognize his insights as well as the incompleteness of the key arguments when transported to a current setting, it is also important to bear in mind the massive extent of development of economics in the past half century. Trade economics has gone through two revolutions — new trade theory (Krugman, 1979 etc.) and new new trade theory (Melitz, 2003 etc.). Development economics has been in almost constant revolution in the same period; in fact, if we go by Bradford DeLong's count, I think we are now in the eighth revolution — what might be termed a "counter-reformation" against the neoclassical revolution (see DeLong, 2001). When Watkins wrote, the concept of a developmental state had not yet been articulated by Chalmers Johnson, we hadn't had the Latin and African debt crises of the 1980s, nor the African renaissance of the 2000s on the back of rising resource prices, nor the coming and going of the Washington Consensus (Williamson, 2004) and the (sort of) arrival of the Beijing Consensus (Williamson, 2012).

Accordingly, a modern reader visits this text with an enormously different perspective than its writer — and yet immediately recognizes many features. And it is those points whose relevance has survived the 50 most intense years of economic history ever experienced to which we need to pay attention. The enduring insight of the "staples thesis" is that what you do as a country heavily influences who you are — and that a country may wish to have an active hand in deciding exactly what it does for a living in the global economy.

Being a resource-driven economy has not prevented Canada from developing and achieving high levels of prosperity. In that sense, Canada has largely avoided the resource curse — or alternatively broken out of a staples trap. This does not mean that concern about the heavy role of staples in Canada's product mix was entirely unwarranted — after all, Canada got to where it is thanks in part to a long history of industrial policy intervention. Indeed in 1963, even as Watkins was expounding his staples theory, Canada was creating the Department of Industry to address the competitiveness problems in domestic industry and was about to enter into the 1965 Auto Pact, a structured (rather than free) trade agreement with the United States to solve the scale economy problem in the auto sector. That being said, as the recent Dutch Disease debate in Canada demonstrates, there are still starkly divided views on whether Canada is sinking back into such a trap.[7]

There are new extensive margins (alternatively, emerging/future/infant industries) opening up everywhere in the current innovation-intensive global economy. One need only look at the policy statements emanating from the major economies to identify those that are particularly attractive in terms of their characteristics. These are the new "battleground" sectors, with advanced manufacturing typically heading the list (see Ciuriak and Curtis, 2013).

In a world where comparative advantage is manufactured by government policy, a country that chooses "laissez faire" is in fact choosing a comparative advantage defined by foreign governments. One might think of a game of musical chairs where the stand-offish laissez faire player gets the seat left open after all the other players have chosen theirs. What staples theory tells us is that might not be optimal, depending on the specific characteristics of the economy at land-intensive extensive margins.

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Notes

1 A key staple of the North American economy is maize or Indian corn, which was developed through millennia of domestication and selective breeding by indigenous peoples and spread through the Americas through trade in varieties. The fur trade was indeed trade and largely between indigenous economies exporting to Europe via intermediaries such as the Hudson's Bay Company.

2 Modern trade economics emphasizes the distinction between the intensive margin (an expansion of trade in existing products) and the extensive margin (the introduction of new products into trade or alternatively of new firms or new destinations).

3 One could use oilsands or diamonds as the example, which Watkins (2007) mentions as recent extensions of staples production; however, these are politically charged areas and raise complex additional issues related to optimal use of non-renewable resources and the appropriate use of revenues from the sale of such assets which deserve a separate focussed comment, including on the fiscal effects which Watkins (2007) mentions. I leave these issues for other comments and focus on a simpler example which in my view allows for a cleaner exposition of the main features of staples theory.

4 Watkins (2007; 118) notes the need for a fuller treatment of non-traded services.

5 For a recent survey of the literature on firm-level learning effects associated with export entry see Ciuriak (2013).

6 For an accessible, non-technical discussion of the new heterogeneous firm theory and the policy implications see Ciuriak *et al.* (2011).

7 I survey this debate in a working paper under development with a working title "The Great Canadian Dutch Disease Debate: Yes, No, Maybe So?" (hopefully forthcoming soon!)

Staples, China, and the Global Revitalization of Industrial Policy

Daniel Poon

IN TIMES OF CRISIS, leading thinkers often reach back to classic texts and writers for core insights to present policy problems, and so it should be with Melville Watkins' classic 1963 article "A Staple Theory of Economic Growth." Fifty years on, it is striking how the fundamental tenets of the staple theory, and the risk of getting caught in a "staple trap," continue to resonate today regarding Canada's economic outlook. Moreover, a great number of developing countries are also seriously concerned over an economic 'curse' or 'disease' from resource-dependence.

But it was his subsequent work arguing for strict regulation over foreign direct investment in Canada that was not only fit for its time, but ahead of it, in light of the more recent revival of themes such as 'resource nationalism,' 'state capitalism,' industrial policy, and 'covert protectionism' that have returned to the policy debate. These trends may have yet to fully filter through to Ottawa, but when they do, heterodox economic approaches may have an opening to press for an overhaul of what Watkins called the "(staple) export mentality" that inhibits more diversified Canadian domestic development (p.150).

The ongoing relevance of the staple theory may not be all that surprising in an era, perhaps now passing, of an international commodities price boom that further concentrated economic production in natural resource sectors in many countries (Haglund 2011). But Watkins' contribution also plays a part in a larger discussion connected to the 2008–2009 global financial crisis — one that forced policy-makers the world over to re-think the conventional wisdom that placed primacy on unfettered market forces over the ability of government instruments and institutions to achieve public policy objectives.

The pendulum between state and market is rebalancing towards the former, albeit not as quickly as many progressives would like. One of the underlying sources of the policy re-think has been the rapid emergence of China as a pre-eminent power in the world economy. This historic change has had many implications (including, obviously, an impact on global commodity prices), but it has also demonstrated the power of a state-directed strategy for industrialization and diversification, with lessons for Canada's own efforts to grapple with the staples challenge.

China is more than just a market for our staples, and Canadian policy thinkers would do well to imagine a more active, strategic partnership with China so as to better understand its ambitions to deepen its industrial base and reach the apex of global production chains.

Kicking-Off a Re-Think

One convenient marker for the fundamental re-think in development and industrial policy-making occurred in March 2011 at an International Monetary Fund (IMF) conference that sought to distill the policy lessons from the crisis. Among the leading policy makers and academics in attendance, it was a presentation by former Harvard professor Dani Rodrik that set the direction and tone for subsequent re-thinking of growth strategies in the aftermath of financial crisis, particularly for developing and emerging countries.

In this presentation, Rodrik drew on insights first developed by W. Arthur Lewis' work on dual economies that equated economic development with "structural change". The core idea was that countries attain prosperity by diversifying away from agriculture and other traditional products, towards modern economic activities, and as this change is underway, overall productivity is bolstered and incomes expand. Lewis typically stressed the large differences in productivity between broad sectors of the economy — be-

tween traditional (rural) and modern (urban) sectors — and noted that this difference *between* sectors could be an important engine of growth even if productivity growth *within* individual economic sectors was minimal.

In the paper, Rodrik (with Margaret McMillan) identifies this "growth-enhancing structural change" as an important contributor to overall growth performance. Crucially, he contends that the bulk of the difference in recent growth experiences in Asian countries versus those in Latin America and Sub-Saharan Africa can be understood by the discrepancies in the contribution of structural change to overall labour productivity. Thus, while in Asia high-productivity employment opportunities expanded and structural change added to overall growth, the opposite has been true in Latin America and Sub-Saharan Africa where labour has moved from more-productive to less-productive activities (most notably, the informal sector), and structural change has served to reduce rather than increase growth since 1990 (McMillan and Rodrik 2011).

The key to getting the good kind of structural change, it seems, has been Asia's strategic approach to economic liberalization that pragmatically combined promoting new, export-oriented economic activities, while simultaneously supporting other activities that directly compete with imports. Latin American and Sub-Saharan African countries, meanwhile, had generally pushed through reforms dictated by the so-called Washington Consensus. The wider point, though, is that since that presentation in March 2011, much of the global policy community has adopted Rodrik's re-working of Lewis' "structural change" concepts hook, line, and sinker.

Now, the concept of "structural change/transformation" has been accepted almost to saturation in economic development circles. This is particularly the case (but not only) with multilateral institutions which all recently published major reports on the issue, such as the World Bank, the African and Asian development banks, the Organization for Economic Cooperation and Development (OECD), the UN Economic Commission for Africa (UNECA), the UN Conference on Trade and Development (UNCTAD), the World Institute for Development Economics Research (UNU-WIDER), the Brookings Institution, and the Initiative for Policy Dialogue, to name a few.

Other major institutional about-faces have occurred, too. The IMF, once an ardent proponent of financial liberalization, also recently adopted a new "institutional view" and is now more accepting of government regulation on capital flows (Gallagher and Ocampo 2013). Moreover, its *Back to Basics* website tries to strike a progressive balance over a wide range of economic issues.

Rethinking Development Economics

Watkins, for his part, is clear to present the staple theory not as a general theory of economic growth (or even export-oriented growth), but as one that is applicable to the "atypical case of the new country," which bestowed on Canada two distinctive characteristics when it began its economic growth processes: a favourable population/land ratio and an absence of inhibiting traditions (p.143).

Although Watkins deliberately sets Canada's economic history aside as a unique case (as well as that of the United States and the other British dominions), his careful analysis of the determinants of the range of domestic investment opportunities associated with the export of a given staple — or the linkage between the staple theory and a theory of capital formation — is the core insight of his work that broadens the applicability of the staple theory to other contexts. To this day, the idea that, "economic development will be a process of diversification around an export base," (p.144) goes to the heart of many developing countries' core policy objectives.

In the years since, Watkins' breakdown of the "spread effects" of the export staple sector and the impacts of these activities on the domestic economy and society have been further elaborated. The core model was often restated to the extent that aspects of this analysis, such as the discussion of linkage effects (backward, forward, and final demand), have become 'old-school' concepts in the mainstream economic development discourse that has been increasingly fixated on foreign direct investment and insertion into global production chains as the surest route to prosperity.

What is changing now are signs that the "inhibiting export mentality" related to staples/commodities production has been weakened — in tandem with the onset of the global financial crisis that discredited the Washington Consensus policy approach and its excessive emphasis on market forces and static comparative advantage. In his paper, Watkins remarked that while interest among Canadians in the staple theory had declined, interest among those outside of Canada had actually increased (p.142–3). In surveying current-day responses to the staple trap (or other structural constraints), it so happens that while Canadian policy makers seem unperturbed by even the possibility of a trap, some policy-makers outside Canada are increasingly taking action to counteract its dislocating effects on their own economies.

A Bevy of Protection

The revival of terms like 'resource nationalism', 'state capitalism', etc. in the mainstream policy lexicon, has led some to believe that "industrial policy

in the leading economies of the South is likely to become more significant" (Gereffi 2013:21). *Table 1* provides a broad overview (from Global Trade Alert, GTA) of the post-crisis policy responses, regarding the implementation of so-called "protectionist measures" and their breakdown according to degrees of discrimination against foreign commercial interests. 'Green' measures are not discriminating, 'amber' measures are possibly discriminating, and 'red' measures are certainly discriminating (Evenett 2012).

Although there are limitations to the accuracy of the GTA database — its methodology does not account for protectionist measures that may have been already in place prior to its reporting period in November 2008, nor does it have any way of assessing coherence of measures, or quality of implementation — it nonetheless offers a rough snapshot of ongoing global economic trends in government intervention and industrial policy. As shown in *Table 1*, the four BRIC countries (Brazil, Russia, India, China) lead the way in terms of most total protectionist measures at 798 — nearly twice the total of six developed countries (which registered 406 such measures). Other regional groupings in Asia and Latin America also had higher levels of total protectionist measures at 583 and 499, respectively, although these groupings include a larger number of countries. African countries combined for a total 264 measures.

The pattern is roughly replicated when looking at 'red' measures only, with the BRIC countries leading the way with 477 measures, followed by Latin America (347), Asia (327), developed countries (306), and Africa (143). During this period, Canada had a total of 52 implemented protectionist measures, of which 29 were deemed of the 'red' variety, among the lowest of any within the developed country grouping.

To give a more concrete example, let's take the case of Mongolia. Following an attempt by the Aluminum Corp. of China (Chinalco) to invest in a coking coal mine in the Gobi desert, the Mongolian government enacted a new foreign investment law in May 2012. The law restricted foreign ownership in businesses worth more than $76m in "strategic sectors" such as natural resources, transport, food, real estate, communications and agriculture, and requires government approval for acquisitions of 33 percent or more of a company's shareholdings, and parliamentary approval for bids of at least 49 percent.

A year on, with commodity prices weakened and Chinalco having abandoned its bid, Mongolian authorities have adjusted their tack and lowered barriers for foreign investors. But the legislation still allows for more scrutiny in deals with state entities, in light of concerns about economic domination by its neighbour and largest customer. The point is that even small

TABLE 1 Protectionist Measures, Selected Country Groupings, Nov. 2008–Jun. 2013

	Number of Implemented Measures			
Groupings (# of countries)	**Green**	**Amber**	**Red**	**Total**
Developed (6)	65	35	306	**406**
Latin America (20)	121	31	347	**499**
Asia (11)	156	100	327	**583**
BRIC (4)	221	100	477	**798**
Africa (52)	73	48	143	**264**

Source Global Trade Alert (GTA). See, http://www.globaltradealert.org/

countries now see fit to experiment with the cut and thrust of industrial policies, even if that means challenging a big neighbour. In times past, this may not have been the case. Back in the 1990s, being an eager pupil of the Washington Consensus, Mongolia agreed to rescind an export tax on unprocessed wool in exchange for a loan from the Asian Development Bank. Mongolian authorities are not likely to forget this experience, as these wool exports would eventually be processed in China (Wade 2010).

Of Dogs Barking and Biting

So what explains the seeming reticence by Canadian policy makers to use similar industrial policy interventions — whether to stem a crisis, or to counteract a staple trap and its associated inhibiting export mindset? Part of the answer, I believe, is due to a chorus of commentators that have constructed a persuasive counter-narrative: namely, that despite enduring the biggest trade shock due to the global financial crisis, the world economy was nonetheless able to avoid a protectionist backlash (unlike the experience of the 1930s in the wake of the Great Depression).

Generally, five explanations have been posited. First, the WTO and other trade pacts have institutionalized liberal trade. Second, countries' use of monetary and fiscal policies has not been without problems, but has been better than in the 1930s. Third, integration created by global production chains has rendered protectionism self-defeating (ie. global capitalism has replaced national capitalism). Fourth, social safety nets were in place to cushion people from recession and joblessness. Fifth, the ideology of markets and globalization remains dominant. In short, the sound bite (with some variation) is that "the protectionist dog did not bark" (Subramanian and Kessler 2013; Wolf 2013; Hancock 2013; Wolfe 2011).

Conveniently overlooked is the fact that what the WTO identifies as a protectionist measure is *narrower* than the definition used by GTA. Thus, some measures recorded in the GTA database, such as investment protection, bailout programs, currency devaluation, and anti-trust measures (among others), would not be considered protectionist measures by the WTO — simply because WTO agreements have limited or no jurisdiction in these areas.

Even the head of GTA, Simon Evenett, put it this way: "While it is not the case that governments have sought flagrantly to flout WTO rules often during the global economic crisis, more and more evidence suggests that they have exploited the incomplete nature of the WTO rules and circumvented them. Such findings leave a rather hollow ring to claims that WTO rules have prevented protectionism during the crisis" (Evenett *et al*. 2012:287).

Thus, the "protectionist dog" chorus seems content to paint protectionist measures of all stripes as not only more or less the same, but also as all *bad*. This rather old-fashioned view assumes that protection is absolutely incompatible with boosting trade and growth. This may hold true for North Korea, but you only need a glance at China these days, combining ongoing but selective protections with targeted degrees of openness to trade flows, to start wondering if the assumption is seriously mistaken.

Of course, not everyone has bought into the "protectionist dog" argument. In 2012, the Chairman and President of the U.S. Export-Import Bank, alluded to this very issue: "Believe me, China and other countries will not be shy about using any tool — as much as they can and for as long as they can... State-owned enterprises, sovereign wealth funds, state-directed capital — they will leverage every single one in an attempt to outcompete us" (Hochberg 2012:9).

Others have argued that "the relevance and pertinence of industrial policies are acknowledged by mainstream economists and political leaders from all sides of the ideological spectrum" (Stiglitz *et al*. 2013:2). For example, these authors point to the EU Commission's return to using selective interventionist policies, and note that "an entire department at the EU Commission is devoting much financial and human resources to design and help implement industrial policies across the Eurozone" (Stiglitz *et al*. 2013:3).

Here, Watkins' Task Force work remains highly relevant and was certainly ahead of its time; some of the strategic tools it proposed, such as investment review and development banks/corporations, remain powerful WTO-legal policy instruments to this day.

A China Choice

While the return of 'state capitalism' and protectionist leanings are still dismissed in mainstream circles in Ottawa, these trends are increasingly rooted in emerging countries, among which China retains an obvious leading role. Canada is not likely to remain immune from these trends indefinitely — and to some extent, the federal government has already had its brush up with them, whether in the form of the investment screening of the 2012 CNOOC-Nexen merger, or the blocking of foreign takeovers of Potash Corp. and MDA Corp.

At some point, Canadian leaders will have to choose between either learning from China's development strategy (and actively managing the opportunities and risks it poses), or trying to tear down the 'China model' so that it poses less of a competitive threat to the current global political and economic status quo. Many moves by Canadian policy makers seem oriented to the second option, but the first option has not been written-off. Efforts such as the "Canada-China Economic Complementarities Study" are welcome, but should only be a first step. The next step should be a more strategic exercise that takes dynamic rather than static comparative advantage at its heart (Poon 2012a; 2012b; 2012c). This is where heterodox economic discourse should play a key role.

As has been noted, Canada "has a profusion of industrial policies, what it lacks is a strategy" (Ciuriak and Curtis 2013:1). Perhaps a way out is to recognize that, in the past, Canada appeared adept at ensuring that so-called clandestine U.S. industrial policy (Block 2008) could also benefit Canada. What's to stop Canada from doing likewise (but hopefully better) vis-à-vis China's (less) clandestine industrial policy?

Progressive Canadian analysts not only need to come to terms with China's rise, but given the changing geo-political winds, to find strategic openings to leverage China's industrial ambitions in pursuit of Canada's own public policy goals on a scale that could not be seriously considered before (renewable energy, for example). After all, China seems well aware that "a crisis is a terrible thing to waste" (Rosenthal 2009), and that political-economic dynamic may be the modern day salve for Canada to help shake-off its inhibiting staple export mentality.

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The Staples Approach and the Financial Crisis

Alistair and Sheila Dow

THE STAPLES APPROACH, and Watkins' exposition of the staples theory, are a quintessentially Canadian contribution to economic thought. It involves identifying the consequences of reliance on production of a particular staple for export as arising from the physical characteristics of the staple and thus its mode of production (broadly defined). It offers an approach rather than a universal theory in that each staple, such as beaver pelts or base metals, has its own characteristics and mode of production. The key is to focus on the nature of a particular product in order to analyse the cost structure of production, linkages with other sectors, demographic effects, the role of the state in its production, the institutional arrangements which arose around this production and its export, the associated power relations and the consequences for the distribution of rents. Harold Innis, who along with William Mackintosh was the main instigator of the approach, also showed how these power relations (as well as communications technology) determined the prevailing ideas about how the economic role of any staple was understood.

But economics in the second half of the twentieth century developed increasingly around formal deductive models designed for universal application. The importance of the specifics of particular staples, as well as the dif-

ferent methods employed for different elements of the analysis, meant that the staples approach could not be generalised in this way. Staples analysis thus continued in Canada outside the mainstream, with some limited application to other economies (notably Australia). But the approach remained essentially of local importance. Yet there is scope for much wider application of the staples approach. In principle it can be used to illuminate analysis of any sector which is important to an economy and its exports. The approach is novel in focusing on the nature of the product and the technical conditions of production, and on the consequent evolution of institutions around this production, the role of the state, the distribution of rents and the character of power relations; these latter influence the prevailing mode of analysis of the product.

In a paper recently published by the *Cambridge Journal of Economics* (abstract available at http://cje.oxfordjournals.org/content/early/2013/06/04/cje.bet021.abstract), we have attempted to show how the staples approach can be applied in this way to the financial sector and the current crisis. The product of the financial sector is not a staple physical product in the traditional sense of a raw material. Nor is its production necessarily in a dependent position with respect to export markets; the financial sector itself is a locus of power. But, using (negative) analogy, we show that, in spite of the differences, finance has sufficient in common with traditional staples for it to be illuminating to analyse it using the staples approach.

The financial sector, like staple products in Canada, accounts in many economies for a substantial proportion of national economic activity and also for exports. The rest of the economy is dependent on the sector in other ways too. A key product of the financial sector is society's money (in the form of bank deposits), in which the state plays a key role. In most economies, the state developed a mutually-supportive relationship with banks, such that banks were backed up by a lender-of-last-resort facility of the central bank in exchange for accepting portfolio restrictions. This system encouraged widespread confidence in the money asset and this in turn allowed banks to supply credit to finance investment. But then the power exercised by the banks over governments forced a process of deregulation which changed the structure of the financial sector and greatly extended the range of its products. At the same time, the increasing use of information technology in financial 'production' facilitated the massive growth of complex structured products. It also changed practices and processes. Banks increasingly made loans by credit-scoring rather than the exercise of judgement and used quantitative models to represent their risk profile

(as required by the Basel capital adequacy rules). Trading in financial markets was increasingly automated by means of complex algorithms; the remarkable speed of trading this allowed added to the scope for market instability. Taken together, the way in which 'production' in the financial sector evolved, with input from deregulation by the state, sowed the seeds of the crisis which began in 2007. The core products, money and credit to finance real investment, were under threat because of increasing engagement by banks in other products.

For all its apparent competitiveness, the financial sector has generated massive rents, contributing to the increasing maldistribution of wealth. Since the rest of the economy is dependent on the financial sector providing its money and also providing credit, governments could not in general allow large banks to fail, since they might bring the entire system down with them. The prevalence of bailing-out in many economies rather than bailing-in has meant that the state has taken the brunt of rescuing failing banks. Further continuing provision of liquidity to banks at low rates has contributed to the survival of failing banks. But this cheap liquidity has tended to support financial speculation by existing wealth holders rather than credit for financing real capital investment. More generally, low interest rates have meant a massive redistribution away from net-saving households while net-borrowing households have sometimes faced higher rates due to higher perceived default risk.

Finally the power exercised by the financial sector has meant that their rhetoric has dominated analysis. Thus, for example, fiscal austerity has been introduced across a wide array of economies to placate the financial sector. High executive pay has been justified as a reward for high skill levels. Where banks have been nationalised or part-nationalised, as in the UK, governments have attempted to behave like private sector owners with a view to a successful eventual sell-off of their stockholdings. This rhetoric is based on analysing banks as generic profit-maximising competitive firms.

This brief analysis has employed a staples approach by focusing on the nature of the product and its mode of production, on interactions with the state, on institutional evolution, and on the exercise of power over rent distribution and over the way in which the sector is predominantly analysed. It is a method of drawing together a range of different types of analysis. The detail will differ from one national financial sector to another: the above analysis is indicative rather than universally applicable. But the aim has been to show that the staples approach has much

wider application than Canadian and Australian raw material products. This uniquely Canadian approach has much to offer the discipline of economics as a whole.

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The Staple Theory and Canada's Innovation Challenge

David A .Wolfe

MEL WATKINS' SEMINAL contribution to the staple theory of Canadian economic growth contains many insights into the key factors that have both contributed to and constrained the pattern of Canada's economic development. While the various contributions to this discussion have focused on various aspects of its contribution, one of the most significant, but unexplored aspects concerns Canada's technological underdevelopment. A careful reading of Watkins' original article, "A Staple Theory of Economic Growth" (1963), portends some of the key themes and insights that have been advanced in the past fifty years to account for the continuing dependence of the Canadian economy on imported technology, and its relative technological weakness compared to other leading industrial countries that enjoy a comparable standard of living.

In the refined version of the staples theory laid out by Watkins, a number of implications flow from the specification of the production function oriented towards staple production. These include the demand for intermediate inputs, the possibility of further processing and the distribution of income. These factors, in turn, established the range of investment opportunities open in domestic markets and the extent of diversification that is

possible around the base of staple exporting industries. Building on Hirschman's work, Watkins argued that the staple economy operates as a form of multiplier accelerator mechanism which stimulates additional investment in the domestic economy as a result of three fundamental linkages with the staple sector: the backward linkage, the forward linkage, and the final demand linkage. The nature of these linkages has been discussed at length in some of the other contributions and need not detain us here.

The focus of this contribution to the discussion is the impact of these linkages on innovative capabilities in the domestic economy. Watkins suggests that the key relationship which determines this potential is that between staple production and the supply of complementary inputs in the economy, including entrepreneurship and available technology. While there is no reference made to Schumpeter in the article, he incorporates a distinctly Schumpeterian perspective by observing that the key factor determining the degree of entrepreneurship in the economy is the extent to which entrepreneurs can perceive and exploit the emergence of new market opportunities. He also notes that to some extent this entrepreneurial role can be met by foreign investors in the domestic economy, and that this can make additional technical and marketing skills available to the new economy. However, even at this early stage in his career he points out that the reliance on external investors "raises many doubts as to the adequacy of foreign entrepreneurship. It may flow freely into the export and import trades, but fail to exploit domestic opportunities. Foreign domination of entrepreneurship may militate against its general diffusion" (Watkins 1963, 57).

An additional challenge can arise from the fact that foreign investors as entrepreneurs may be biased against investing in domestic activities. They may prefer to continue expanding their investments in the export industry, or to invest in the import trade. One of the challenges of a staple-based economy is that staple exporters will exhibit a mentality that favors the continued export of staples resulting in an over-concentration of investment and resources in the export-oriented sector of the economy, thus restricting or inhibiting investment in more domestically oriented sectors or other export-oriented sectors of the economy. Excessive reliance on staple exports combined with dependence on foreigners for both investment capital and entrepreneurship may, in turn, produce a domestic economy that draws excessively on foreign technology, with an inadequate or under-supply of domestic entrepreneurship and technology.

Towards the end of the essay, Watkins vacillates between a certain degree of pessimism about the long-term development potential of a staples-

based economy, and a moderate degree of optimism. He says that "Canada is a small and open economy, a marginal area responding to the exogenous impact of the international economy. The basic determinants of Canadian growth are the volume and character of her staple exports and the ability to borrow, adopt, and marginally supplement foreign technology.... These factors create no assurance, however, of a rate of growth sufficient to maintain full employment even if the expansion of the labor force be limited to natural increase" (1963, 72).

Despite the pessimistic tone, Watkins characteristically concluded on a more positive note by saying, "economic institutions and political values, and inefficient structure of industry combined with an unwillingness to do anything about it, have in the past prevented Canada from growing at a satisfactory rate in the absence of a strong lead from primary exports, but this need not be true for the indefinite future" (1963, 73). Although Watkins was cautious about suggesting what would be required to alter Canada's suboptimal trajectory of economic development, the clear implication was that it would require a significant degree of government policy intervention. However, as Abe Rotstein suggested in his initial contribution to this collection, many of these challenges continue to plague the country, as both the majority of Canadian business leaders and successive generations of government policy-makers have proved reluctant to finance the critical investments and introduce the supportive policy frameworks (with some notable, but short-lived exceptions) that would have fostered the growth of more value-added industries in Canada.

The two decades following the publication of the article witnessed a host of major policy developments in Canada, including the Auto Pact, the Watkins Report on foreign ownership (and the subsequent fledgling measures to regulate the inflow of foreign investment), and the deepening integration of Canada into both the continental and global economies, facilitated by successive rounds of multilateral trade agreements, and ultimately the Free Trade Agreement with the U.S. Yet, hardly any of these measures addressed the fundamental issue of Canada's innovation challenge. Beginning in the 1970s and growing during the 1980s, a number of economic and policy analysts pointed to this lacuna and elaborated on the critical link between the predominance of foreign ownership in the Canadian economy and the continuing lack of what the Science Council of Canada labelled 'technological sovereignty'.

While the connection to Watkins' staple theory article was not always explicit, some of the analyses provided an insightful diagnosis of the factors

which continued to inhibit the growth of a more economically diversified and technologically innovative secondary manufacturing sector. Particularly significant was the study by John Britton and James Gilmour entitled *The Weakest Link* (1978). The central thesis of the study was that the underperformance of Canada's industrial economy could largely be explained by the behavior of firms with respect to investments in innovation and technology development, and in particular by the role of foreign direct investment in the Canadian economy. They argued that the low level of technological sophistication and the relative lack of innovative behavior were directly attributable to the choices made by individual firms operating in the Canadian economy.

Britton and Gilmour showed that the unrestricted inflow of foreign direct investment into Canada resulted in a lack of innovative activity among Canadian subsidiaries of foreign firms who largely depended upon the transfer of mature industrial and product technologies from their parent companies. As a consequence, Canada has been a recipient in the international technology transfer system, and for the most part domestic firms have been dependent on this imported technology or imitative of it. The small domestic firms in the Canadian economy have been constrained by their limited capacities and the lack of support they received from public purchasing or procurement and investment. An additional consequence of this trend has been the overreliance of the Canadian economy on the production of manufactured goods that depend on mature product technologies.

They suggested that Canada could potentially improve its innovative performance by investing in scientific research and development, but this, on its own, would not be sufficient to overcome the technological deficit that the country was facing. Improving the overall technological level at which major industries in Canada perform would require much more, given the limited incentives for innovation and technological development offered by the marketplace in Canada. This implies the need for government action to regulate the nature of technology imports and strengthen the bargaining power of Canadian firms when purchasing technology from abroad.

The concluding chapter to the study suggested that the formulation of technology policy in Canada required attention to both the demand and the supply side of what we have subsequently come to call the Canadian innovation system. Canadian policy has traditionally focused on increasing the supply of research and development as a necessary prerequisite for industrial innovation in products and processes. However, the impact of this focus was limited to fewer than 500 firms (at the time of writing). More importantly these various policies were never coordinated into a coherent in-

dustrial strategy. They tended to focus on the generation of new knowledge without considering the full range of linkages required to stimulate demand for new products or support the linkages between innovation and broader economic goals. While there was a brief flurry of interest by the federal government in industrial strategies in the late 1970s and early 1980s, it failed to produce a major policy shift.

Subsequent studies by the Science Council continued to stress the need for more focused and coherent government policies until its untimely demise in the early 1990s, but this view gained little traction with the mainstream economics profession. One notable exception was Richard Harris' interesting study entitled *Trade, Industrial Policy and International Competition* for the Macdonald Royal Commission (1985). While Harris was broadly supportive of free trade, the study was somewhat unique in recognizing that unrestricted free trade, introduced into a small, open trading economy such as Canada's, posed significant innovation challenges for domestic firms, especially smaller, indigenous ones — a point that was completely lost on the vast majority of his colleagues in the profession.

Theories that link international trade with technological innovation argue that shifts in leadership are not randomly distributed across industrial sectors or between countries. Harris argued that much of technological competition tends to be cumulative and that the nature of that competition contains a large degree of irreversibility. There are substantial advantages to being first. Trying to adapt industrial and technology policy on the principle of catching up to the technological leaders may prove difficult. Innovation and technological leadership are dynamic processes. Technological competition tends to be pre-emptive and produce irreversible results. The initial advantages that accrue to the technological leader in an area allow it to retain that lead for a period of time and to undermine the efforts of its competitors. The benefits of technological leadership allow a firm to recover its research and development costs, as well as realize a higher than average return on its investment. In effect, 'success breeds success,' or "being successful today raises the probability of success in the future" (Harris, 1985: 99). This may greatly reduce the chances for competing later on, which will open up a significant gap between the technological leaders and technological laggards — resulting in significant differences in national incomes between the two types of economies and a significant trade surplus or trade deficit in high technology products.

Harris suggested that there is a bias in small open economies against Schumpeterian or technology-based industries. The entry barriers associ-

ated with technological innovation affect smaller firms to a greater extent than large ones. And to the degree that smaller economies are characterized by a larger number of smaller indigenous first firms, this places the entire economy at somewhat of a disadvantage with respect to technological competition, "the Schumpeterian industries in small economies suffer from a relative disadvantage in industrial structure." As a consequence he suggests "the social incentive to subsidize Schumpeterian industries is greater in a small open economy than in the large closed economy" (1985, 105). The reason for this is that the relatively smaller size of firms in the smaller economies leads to a suboptimal industrial structure with respect to competing in Schumpeterian-based industries. However, he also notes that subsidizing small firms to engage in greater levels of R&D spending does not automatically ensure that the firm will grow to sufficient size in order to overcome the barriers to entry in world markets. He concludes that market failure in the industrial R&D process within Schumpeterian industries disadvantages firms in a small open economy, resulting in the need to design technology policy with this fact in mind.

The analysis prepared by Britton and Gilmour for the Science Council in the 1970s (among many others that made the same point), as well as Harris' much neglected study for the Macdonald Royal Commission in the 1980s, underlined the fact that the inherent structure of the Canadian economy — its staple export orientation, excessive reliance on foreign ownership and imported technology, and the relative small size of technology-based firms — combined to put Canada at a competitive disadvantage with respect to other leading industrial countries. The logical corollary of these facts, presaged by Watkins' staple theory of growth in 1963, and reinforced by every major study of Canadian science and technology policy since then, is the overwhelming need for a focused, coherent and strategic approach to stimulating innovation and technology-based development in the Canadian economy.

Growing recognition of this fact during the 1980s and the 1990s led to a host of new policy developments at both the federal and provincial level. As these policies were introduced, the research base of Canada's innovation system expanded considerably, as did the policy supports for firm-based innovation (primarily through the tax system) and the sources of innovation financing available to start-up firms. The increased support for research, development and innovation led both directly and indirectly to a significant expansion of the supply side of the innovation system, primarily in terms of publicly funded R&D, as well as to a growing number of innovative start-

ups in information technology, biotechnology, clean tech and a number of other leading edge sectors of the Canadian economy. Despite this relative improvement in Canada's technological performance over the past two decades, we still lag considerably behind Europe, the United States and East Asia largely because the underlying constraints analyzed in Watkins' article continue to exert a predominant influence over the trajectory of Canada's economic development.

The continuing challenge of Canada's technological development has been reviewed recently in a series of studies by the Council of Canadian Academies, which are nicely summarized in an overview report entitled *Paradox Lost* (2013). The report highlights the considerable research strengths that Canada displays on the supply side of the innovation system, which is consistent with a number of other studies and reports over the past decade, and not entirely surprising in light of the considerable public resources that have been poured into supporting the research system over the past three decades. However, the paradox referred to in the title is the continuing weakness of Canada's business innovation performance, which the Council attributes to the relative weakness (and declining share) of the manufacturing sector in the national economy, particularly since the end of the tech boom in the early 2000's; the lack of specialization of Canada in high technology, R&D-intensive industries, compared to other industrial economies, particularly the U.S.; and the lack of emphasis by Canadian firms on innovation-focused business strategies, which the Council attributes primarily to Canada's continuing reliance on imported technology from the U.S. (made easier by its integration into a continental North American economy, the relatively smaller size of the domestic market in Canada and the commercial success achieved by Canadian business in its chosen niche — namely, staple-based exports). Both the overall analysis by the Council and its concluding comment strongly echo the line of thinking discussed thus far: "With little motivation to change a successful formula, many firms have settled into a 'low-innovation equilibrium' that has conditioned Canadian business habits and ambitions. Canadian business behaviour cannot be expected to change unless the conditions that have sustained its profitable, low-innovation equilibrium change first" (Council of Canadian Academies 2013, 7).

The authors of the report then go on to argue that these conditions are rapidly changing, due to the continued growth of industrializing countries in the global economy, the increasing environmental constraints on resource-based development, and the accelerating pace of innovation in a wide range of fields from information and communications technology

to genomics and nanotechnology. The fundamental challenge confronting the Canadian economy remains essentially the same as that identified by Watkins 50 years ago: the need to establish a strategic policy framework in Canada to shift the focus of Canadian firms out of their low-innovation equilibrium in the staple-exporting sectors of the economy, moving into sectors that concentrate on providing an expanding number of markets with a broader range of innovation-intensive products and services. The unanswered question remains: what will it take for policy makers across the political spectrum and at all levels of government to recognize the compelling need for this shift in strategy. Given the central role that he has played in pulling together this retrospective on the lasting significance of Mel Watkin's contribution to staples theory, it is only fitting to give the last word on this subject to Jim Stanford himself,

"To meaningfully address and reverse the continuing failure of Canadian innovation and productivity we therefore need to adopt a more open-minded approach to economic policy... We should view effective public interventions and leadership as a key asset in nurturing investment and growth in the most desirable industries of the future — rather than as a barrier or inhibitor to private sector innovation and accumulation. This will require a longer-term, deliberate effort to rebuild the capacities of federal and provincial agencies in this regard." (2011, 30)

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Rejoinder: Bitumen as a Staple

Mel Watkins

Birds foretell our fate

The canary in the mine

Chickens come home to roost

The owl flies into the gathering dusk

Ducks trapped in the tailing ponds

Feathered and tarred

Flight cancelled

I AM DEEPLY grateful to my friend and fellow progressive economist Jim (Jimbo) Stanford for initiating this project on staple theory. As the constant face of progressive economics in this country, I'm hard put to imagine how he found the time to do so. I am indebted as well to the numerous commentators he has persuaded to participate, and to those who volunteered. I thought I still knew a good deal about this topic, but I have learned much.

This has been for me a happy and humbling experience. To have my name and that of Harold Innis in the same sentence is for me always a joy and a compliment, something I could never have imagined when I attended his lectures more than sixty years ago. And, as I once heard the great Paul Samuelson say, the respect of one's peers is a very special applause.

It feels good to have written something with a shelf life of half a century. It feels not so good that fifty years on the resource-based structure of the Canadian economy, and polity — with their dependence on global forces largely beyond our control and with their increasing capacity for environmental degradation — has actually deepened.

Born as an offshoot of Europe that, like other New World colonies, could not survive without a staple to export to the metropolis, Canada has actually managed (that is, been mismanaged) to regress to its origins. Sadly, bitumen is the worst of staples, matched only by asbestos; while it had little overall significance for Canadian economic growth, the governments of Canada and Quebec, while ultimately banning its use at home, wouldn't ban its export — to poor countries, with weak worker protection — even until the last mine in Quebec closed. There is evidently a serious problem of addiction to resource exports with slight regard of the consequences for the world.

Bitumen is what economic historians have come to call a superstaple, with an impact bordering on the monocultural. For the New World, the dark side of cotton and sugar was slavery, with horrifying global consequences. For bitumen it is extreme climate change and its catastrophic consequences for the wellness of the world and of all of its species. Slavery was abolished in the face of protest (only in the U.S. was war required). The same must be done to the mining of bitumen. (The ingenious comparison of human slavery and present servitude to oil is developed in Andrew Nikiforuk's excellent book, *The Energy of Slaves: Oil and the New Servitude*.)

Oil has a track record — it is, of course, not just a staple export for Canada, and bitumen is not our first export of oil — and it is not a happy one. Compared with almost any other staple anywhere — for example, wheat in western Canada or fish in the Atlantic provinces — studies show oil comes out second-best even before climate change is factored in. The best of the linkages is fiscal linkage: royalties and taxes which can then be used to seed diversified, greener, development. But Canadian governments are too deferential to the oil companies, with their enormous power, too lacking in imagination, to do that. The weakness of linkages in general from oil almost guarantees Dutch disease and worse. (As I write, the business press, which has been replete with deniers of Dutch disease, is gleefully reporting that the falling Canadian dollar is helping those Canadian exports which, only yesterday, were not being hurt.)

Recent research on resource development for export in poorer countries, as in Africa, shows considerable scope for active state policies of pursuing linkages along lines advocated by the late Albert Hirschman. This suggests

there could be significant room for aboriginal communities in Canada to promote economic development via fiscal linkage and that our historic denial of governance rights to aboriginal people is not only immoral but inefficient. (Indeed, there is already evidence of aboriginal people benefiting from resource development; see Susanne Mills and Brendan Sweeney, "Employment Relations in the Neostaples Resource Economy: Impact Benefit Agreements and Aboriginal Governance in Canada's Nickel Mining Industry," *Studies in Political Economy* 91 Spring 2013.) And there is the very real possibility that at least some aboriginal communities with a strong commitment to land and nature will say 'No' to the oil industry when given the chance, and by serving themselves will also serve the world.

Staple theory finds its origins in Canadian economic history, particularly as written by Harold Innis and W.A. Mackintosh. Innis was self-consciously attempting to develop economic theory more relevant to Canada than that imported from imperial centres. Is that a useful exercise?

Consider the question: is free trade good for Canada in terms of economic growth and jobs? The conventional wisdom of neo-classical economics asserts unambiguous benefits and this becomes propaganda in the hands of corporations and governments. Yet benefits are, in fact, surprisingly hard to find. True, trade increases, both exports and imports, but that kind of mercantilist thinking in itself proves nothing about benefits even within neoclassical theory. The promise consistently made is that productivity will be given a kick start in Canada — a kind of shock effect — but after free trade has happened we find Canadian governments and business continuing to complain that we are laggards in productivity and that universities must do this and unions must do that and NGOs must shut up. Business elites engage in a litany that blames everyone but themselves. The bias of benefits toward the resource sector from free trade helps us to understand why Albertans, in Alberta and in Ottawa, are amongst the strongest supporters of free trade.

We should likewise note — it is critical to our story of the coming of free trade — that Innis was never a narrow economist, that he understood the necessity to pay attention to power and its distribution. His writings are relevant not only to economics but also to history, politics, sociology. He was, in short, a political economist. So it is that staple theory became central to the creation of the "New Canadian Political Economy" in the past fifty years, which sees the Canadian capitalist class, which manages our relationship with the global economy, as having a "staples fraction" with the muscle to maintain the status quo of resource dependency while masking that behind the rhetoric of the inherent goodness of the market.

What would staple theory predict about the effects of free trade? It implies that the famous law of comparative advantage so loved by orthodox theory is very likely to enhance Canada's advantage in existing exports of resources by improving access to external markets — the obverse of this being that foreign buyers have improved guarantees of access to Canadian resources, hence, it so happens, virtually ruling out any national energy program for Canada — rather than in manufactured goods where Canadian firms may be too inefficient to export while losing out to imports. In short, the Canadian economy simply becomes more entrenched as a staples economy.

Indeed, this is a pretty good description of what free trade has done so far for Canada. It has exacerbated the staples trap as the Canadian variety of path dependency. It has entrenched a mind set among Canadian elites that protects them from seeing that they are a big part of the problem.

Innis not only gave us the base for staple theory. He also pioneered the development of communication studies by examining the impact of media on human consciousness in terms of space and time. Aware of the long history of empires, he saw media as their staple. Writing in the middle of the last century, he feared that the spatial had totally trumped the temporal, that our reach exceeded our grasp — our understanding, our wisdom — that we had become dangerously present-minded, prepared to blow up the world in order to kill communism. He thought that the flourishing of culture, the good life of communities, depended on a better balance between the spatial and the temporal, less attention to spatial dominance and more to respect for the past and the future. Since Innis wrote, we seem mostly to have experienced more imbalance.

Meanwhile, oil as a staple has intensified the obsession with space to the neglect of time. Trade spreads globally and, in corporate talk, gives us the grand new age of globalization the better to give a good face to the mad corporate drive to intrude everywhere. Power lies with the corporation which, in the oil business, tends to have considerable longevity. It exercises remarkable foresight in planning its own bottom line while blithely ignoring the long-term public interest — though the very recent decision of a number of large American corporations, including Exxon/Mobil, to build a carbon tax imposed by government into its planning of future costs is good news. Still, Big Oil counts its known reserves as an asset on its balance sheet, and keeps trying to find more, though if they are in fact fully used up global warming could pass all tolerable levels. The reality is a spreading ecological footprint, unambiguously adding to carbon emissions and thereby to catastrophic climate change. The market, the holy grail of orthodoxy, destabil-

izes nature — drilling on the bottom of oceans, 'fracking" — and when the known externality of global warming causes ice to melt to then, in a spiralling positive feedback, step up drilling in the Arctic with more global warming. For the Harper government, the possibility that it might be compelled to do something about climate change in the future becomes the occasion to press for more rapid exploitation, to sell off our oil before that happens. We are in the world of the absurd, the insane.

Mr. Harper, as he likes to boast, does not take 'No' for an answer from anyone. As long as he can hold his support in the prairie provinces — managing even to persuade the NDP premier of Manitoba to resign in order, as his Canadian ambassador to the U.S., to shill for the Keystone pipeline to carry bitumen to U.S. refineries — and add the ring around Toronto where suburbanites want cheap gas for commuting (and gave us Harper-supporter Rob Ford as mayor), he can head up the Canadian petrostate.

Resource extraction rapidly draws down resources created over billions of years with wanton disregard of the long-term consequences. To follow the wisdom of Innis is to see the terrible folly of what Canada is presently doing. In the *New Yorker* (Dec. 23 & 30, 2013), Elizabeth Kolbert reports the views of the Nobel Prize-winning chemist Paul Crutzen on atmospheric change from greenhouse gas emissions: "Just a few more decades of emissions may bring atmospheric carbon dioxide to a level not seen since the mid-Miocene, fifteen million years ago. A few decades after that, it could easily reach a level not seen since the Eocene, some fifty million years ago." On what this incredible finding means for the future, Kolbert quotes Crutzen as having written that global climate is likely to "depart significantly from natural behaviour for *many millennia* to come" (italics added). We barely know what we have done — much less what can be done about it.

Which is not to say that there is not a study waiting to be done on "Staples and Protest" — with a final chapter on how pipelines were stopped. Wheat was in most respects a good staple for Canada, though certainly not for aboriginal people who were starved off their homeland and otherwise pushed around to permit settlement. The grain farmers of Saskatchewan gave us the CCF (now the NDP), and Tommy Douglas, and medicare. The new staples — potash, uranium, oil and gas — have facilitated the replacement of social democracy by neo-conservatism, though note must be taken of the blocking by the Harper government, no less, at the insistence of the government of Saskatchewan, of the foreign takeover of Potash Corporation. Above all, we must praise those who protest pipelines, and particularly those, notably aboriginal peoples, who are prepared to stop them by non-violent means. (Read Joel Harden's

just-published *Quiet No More: New Political Activism in Canada and around the Globe*, and be impressed by how much is already happening.)

It would, of course, help if President Obama would say 'No' to the Keystone XL pipeline, but is it not the most revealing part of the story of staples in Canada that the decision is his, not ours, and we have let that happen? Mr. Harper has led us into a corner of his making and tightened the grip of the staple trap.

Should Obama say 'Yes', which is still distinctly possible, that will not cause Big Oil and the federal government and various provincial governments to cease pushing for pipelines to transport bitumen west to the Pacific and East to the Atlantic and on to China or elsewhere, though their doing so will deal with neither the staple trap nor the carbon trap.

My 1963 article has perhaps encouraged some readers to think too much about linkages and how to enhance them, to focus on incremental change when it is transformative change that is necessary. (The economic historian Tom Easterbrook, one of my teachers and, later, one of my colleagues, liked to distinguish between "growth" and "development," between a "pattern of persistence" (aka staple trap) and a "pattern of transformation.") Fifty years on I have grandchildren, and know that the world must move ASAP from dependence on fossil fuels to reliance on green technologies. This will involve a wrenching change for Canada because bitumen is now the superstaple driving our economy and our polity. With our location and our abundance of resources — both being matters simply of luck — it is possible that we will, relative to most of the world, not do as badly from global warming, and be tempted to pretend all is well. To do so would be, morally, ethically, a crime against humanity. In the nature of things, it is those with the greatest capacity to do terrible damage who have the greatest obligation to cease and desist.

In the attempt, following Innis, to find some balance between the spatial and the temporal, we may find solace in the possibility put forth independently by the American environmentalist and activist Bill McKibbin, the Canadian philosopher Charles Taylor, and the American writer and activist Rebecca Solnit.

To be concerned, as McKibbin is, about our very survival on this planet that we have made increasingly catastrophe-prone, is to be conscious of the need for "deep economics" (the title of one of his books), of the understanding that the economy is both embedded in society and deeply embedded in the ecology, cognizant of the billions of years behind us and ahead of us, and of our obligation to be respectful of "nature" so as to permit of

life. Thereby the banality and barbarism of the spatial, so evident in today's corporate discourse and practice of "globalization," might be tempered by Innis's "plea for time," that has come to mean literally more of it for us on this planet.

Taylor, in his deep reflections on our secular age (in his book *The Secular Age*), foresees in the fullness of our reason and our being "certain ecological ethics of our day, particularly deep ecology." Out of this foresight comes "communitas" — a drawing together as a community which, in its "fundamental egalitarianism" includes everyone. This underlying community, this deep solidarity, "breaks out in moments of exceptional danger" — danger of the kind that extreme climate change is already creating. In fact, communal rallying in the face of catastrophes past and present is what Solnit finds, and documents, in her *A Paradise Built in Hell: The Extraordinary Communities that Arise in Disaster*.

These may not be the best of times, and they may well get worse, but there is room for hope if we will but face up to our situation. In Canada, that means escaping both the staple trap and the carbon trap by weaning ourselves from the export of bitumen.

And, finally, should you be in Los Angeles for any reason, do visit the La Brea Tar Pits in the city itself. Tar a.k.a. bitumen has been seeping upwards for thousands of years, during which animals have been trapped and their bones preserved, with specimens now on display in a museum next to the pits. School children visit and it's a major tourist attraction. Count that as a linkage of bitumen — and, I suppose, should tourists be trapped, the skeletons can be displayed in some distant time as remnants of a civilization foolishly built round the worship of bitumen.

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