

Faculty Workload and Productivity in Canada In an Era of Global Crises

By Henry Lee Allen

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The United States dwarfs Canadian society in global impact and visibility, but this status may be changing.¹ A nation spanning six time zones with immense natural resources and beauty, Canada belongs among the elite postindustrial nations. What nation hosted the 2010 Winter Olympics? Which nation hosted the 2010 G8 and G20 Summits?

A federation of ten provinces, Canada also has three territorial governments.² With 34 million citizens, its population is about equal to California—a tenth of the U.S. figure. Nearly 38 percent of Canadians live in the province of Ontario. Four million residents live in Toronto, Ontario's principal city, and one of several attractive urban centers, including Montreal, Ottawa, Calgary, and Vancouver.

Canada has been described as "a federal constitutional monarchy and a parliamentary democracy."³ A prime minister whose political party has the most seats heads its government. "We do have a minority government at

the moment," notes one observer, "meaning the Conservative Party has the most number of seats. But the combined opposition—New Democratic Party, Liberal Party, and the Bloc Québécois—has the majority of seats," he notes. "This requires the government to have the support of some opposition members to pass legislation." Canada, this observer adds, "has had relatively few minority Parliaments."⁴

Fulfilling Canada's aspirations for a global future in commerce and education requires an excellent academic system. Canada's major research universities—especially strong in engineering, science, and technology—include McGill University, the University of Toronto, the University of Montreal, the University of Alberta, and the University of British Columbia.

This essay explores the status of Canadian higher education and its academic professions. How have Canadians dealt with affordability, diversity, assessment, productivity, workload,

and tenure—the same problems that preoccupy American higher education? Why is Canada's academic system often overlooked on the world scene? How do its academic policies address the global recession?⁵ Exploring these questions requires reliance upon Canadian experts.

Canadian history stretches from the indigenous nations to French and English explorations and occupations to recent waves of immigration.⁶ But rather than focus on this history, this article examines recent macro-level developments in higher education.

CANADA: A PORTRAIT

Canada covers 3,851,787 square miles of land. Its climate varies from the Arctic tundra to Ontario's variable Great Lakes climate and to the milder temperatures of British Columbia. Service sector industries (69 percent) dominate the Gross Domestic Product (GDP), followed by manufacturing and mining (29 percent).⁷ The agricultural sector—wheat is the major export—employs only two percent of Canadians, mirroring its proportion of GDP.

Canada possesses a strong multicultural identity. Canadians use the word “mosaic” to describe the nation's social composition. Americans, in contrast, use “assimilation” or “pluralism” when discussing (and debating) immigration and demographics.⁸ “One common theme of Canada's history,” notes a prominent historian, “is the emergence of different linguistic, cultural, sexual, regional, religious, and economic identities, federally or regionally, whatever the desire of authority, be it Ottawa or Quebec, to make us take a broader view.” Canada, this scholar notes, differentiates its collective identity from its southern neighbor. It is a nation where immigrants are always reinventing that identity via “hyphenated Canadianism.”⁹ It is also a refuge for broken economic and national dreams, with a simultaneous impulse for prosperity. But it is also the largest source of immigrants to the U.S.. A confederation negotiating the complexities of its roots in French-English relations, it possesses

deep “national traditions of civility, tolerance and cooperation which, however imperfectly, set standards for civil conduct.”¹⁰

About 43 percent of its citizens are Roman Catholic; Protestants are a religious minority (29 percent).¹¹ The primary language of 59 percent of the population is English. About 23 percent are primarily French speaking, mainly concentrated in the province of Quebec.¹² With its relatively lenient immigration policies, Canada had the world's highest immigration rate during the 1990s. Canada has absorbed more than 3.3 million immigrants since 1990—nearly a tenth of its total population—the majority coming from Asia.¹³

Over 75 percent of Canada's population lives in cities.¹⁴ Urbanization, notes a Canadian sociologist, has resulted in social oscillations among individualism, pluralism, relativism, bilingualism, multiculturalism, and fluidity.¹⁵ Myriad social problems, this observer predicts, may result from inequities in schooling and employment experienced by foreign nationals and their children.¹⁶ Prejudice, discrimination, and social stratification are neither absent, nor unexpected, despite the national traditions.¹⁷

Canada, according to the Organization for Economic Co-operation and Development (OECD), has a bright economic future—the result of investing 6.2 percent of its GDP in education, surpassing the 5.7 percent OECD average. Its 15-year old students perform near the top in reading, science, and mathematics. Canada also successfully integrates youth with low levels of education into the labor market.¹⁸

THE SOCIOLOGY OF CANADIAN HIGHER EDUCATION

Here, as elsewhere, the vicissitudes of political economy shape postsecondary education.¹⁹ Public support sets Canadian universities apart from the mixed system of control and funding in the United States. Education is a provincial responsibility; there is no federal department or ministry of education.²⁰ But many national initiatives invigorated Canada's academic system

in the last decade. In 2006 alone, Canada's national government invested \$5 billion in research and development: \$3 billion went to the higher education, business, and not-for-profit sectors.²¹ This level of public sector investment in the academic system attracts many private sector collaborations.

A 2008 government report, developed by the Science, Technology, and Innovation Council (STIC), envisions the future of Canada's 400 universities and colleges.²² The report's authors, including civic, corporate, medical, university, scientific, and government leaders, recognize that Canadian faculty members are at the core of the nation's R&D efforts.²³ "The Canadian higher education sector," the report notes, "performed some \$10 billion, or 34 percent of Canada's total R&D."

The report advocates public policies that facilitate knowledge transfers among experts in complementary institutional settings. Innovation spurs productivity, defined as "our ability to make the best use of our people and other resources to increase our standard and quality of life."²⁴ Innovation, the report notes, requires a supportive marketplace, engaged citizens, skilled workers, infrastructure, accurate performance measures, and collaboration between the private sector, academe, and government.²⁵

Figure 1 summarizes the advantages, challenges, and opportunities in linking innovation to productivity, according to the report. National imperatives and international competition drive Canadians to strengthen their role in global science, with salutary economic results. The nation's resources include an educated, philanthropic citizenry, national healthcare, and its public universities. Canadians discern that "the share of total national R&D that is performed by universities is among the highest in the OECD and is well above G-7 averages."²⁶ Consequently, Canadian leaders wish to promote collaborations that strengthen the industrial infrastructure by emphasizing applied research, targeted or incentive-based funding schemas, and knowledge and technology transfers.

Canadians seek advantages in entrepreneurship, knowledge, and human capital. Entrepreneurship will translate knowledge into products that enhance the welfare of Canadians. Innovations, collaboration, policies, and investments are geared toward the centrality of its knowledge advantage. The human capital advantage will result from targeted investments in educating future generations.²⁷ The STIC report begins with a university-based research core across the sciences, and moves toward promoting productive collaborations within Canada and beyond.²⁸ Within higher education, it advocates generating leadership and innovation in global science and intellectual markets. It suggests spurring collaboration with entities outside the academic system to increase commercial innovations.

Canadian experts offer diverse assessments of the components and internal dynamics of their academic system. One scholar describes its complexity: "In Canada, we are in a constant state of study of post-secondary systems, province by province and as governments change. Some provincial governments are seized with international competitiveness, others with governance, or rates of entry or graduation or cost containment."²⁹ "Our constitutional division of powers with provincial control over post-secondary education," she adds, "[requires] the analysis of ten systems and with no national policy or analytic capacity; making Canadian postsecondary education simply too difficult for this type of comparative research."³⁰ Noting the post-World War II expansion of Canadian higher education, she observes: "The questions of tiering, diversity, government control, educational markets, and the ongoing issues of stratification and inequality are widely debated topics in Canada and the subject of political campaigns among students as well as politicians."³¹

Many experts note an "institutional flatness." "Canadian universities, when compared to the American or, in different ways, the European higher education system, are remarkably homogeneous across a range of institutions," explains

Figure 1. Canada's Universities and Innovation: Advantages, Opportunities, and Challenges

Canada's Advantages	Canada's Opportunities	Canada's Challenges
<p>Universities are more central to R&D than in other countries. Relative to the size of its economy, Canadian universities produce research-based spin-off companies at a high rate.</p>	<p>Increase university-business collaborations to produce more innovations and convert discoveries into commercial successes.</p>	<p>Keep pace with the most innovative nations (below G-7 average in business R&D).</p>
<p>Young Canadians excel on OECD achievement tests in math, reading, and science.</p>	<p>Greater investments in R&D, especially related to private sector.</p>	<p>Increase inter-institutional collaborations to create a dynamic competitive economy.</p>
<p>A legacy of groundbreaking scientific achievements.</p>	<p>Increase contributions to global science and markets.</p>	<p>Increase the number of Canadians pursuing advanced degrees to achieve parity with other OECD nations.</p>
<p>One of the world's most educated populations.</p>	<p>Prioritize public investments in (1) environmental science and technologies, (2) natural resources and energy, (3) health and life sciences, and (4) information and communication technologies.</p>	<p>Promote adult literacy and technology training.</p>
<p>Canadian university R&D had the fastest growth rate, 1997–2007, and the strongest government support of business R&D as a percent of GDP.</p>	<p>Increase the visibility and international status of Canadian universities.</p>	<p>Reduce deficits in Information and Communication Technologies (ICT)</p>
<p>The share of Canadian university R&D that is financed by business is one of the highest shares in the world.</p>	<p>Maintain and keep highly educated citizens.</p>	<p>investments, increase capital intensity, spend more on machinery and equipment.</p>
<p>National policies demonstrate respect for diversity or multiculturalism.</p>	<p>Produce a workforce with leading-edge research and problem solving skills, and a desire for lifelong learning—including technological proficiencies, leadership and entrepreneurial competencies—to promote innovation in products, services, and market processes.</p>	<p>Reverse decline in Nobel Prizes, Fields Medals, and Wolf Prize.</p>
<p>Ranks fourth on international measures of well-being. Calgary, Montreal, Ottawa, Toronto, and Vancouver are among the world's premier cities.</p>	<p>Accentuate the outstanding global academic achievements of youth in science, math, and reading (ranks third after Finland and Hong Kong).</p>	<p>Compete in global markets for scientific and technological innovators.</p>
<p>National health care and a philanthropic, engaged citizenry.</p>	<p>Increase funding for adult education (literacy) and workplace development.</p>	<p>Increase R&D expenditures to keep pace with leaders, including Finland and South Korea.</p>
<p>Leading publications in biology, earth and space sciences.</p>	<p>Increase the number and proportion of advanced degrees awarded in science and engineering fields, and in business.</p>	<p>Increase the proportion of universities and businesses collaborating for R&D.</p>
<p>A 2008–09 survey ranked Canadian institutions fourth in the world.</p>	<p>Target immigration policy on increasing the number and proportion of Ph.D.s and increasing international student enrollments.</p>	<p>Manage a declining birth rate and an aging population.</p>
<p>Strong growth in government funding. Universities receive the majority of Canadian R&D funding: almost half of total federal R&D expenditures in 2007.</p>	<p>Increase the number of researchers throughout the occupational structure.</p>	
	<p>Achieve a higher share of distinguished international awards.</p>	
	<p>Move the nation beyond the middle in OECD and other international rankings.</p>	

Source: Adapted from Science, Technology, and Innovation Council, 2008.

a sociologist. “[W]hile there are elite universities in Canada (most obviously McGill and the University of Toronto, and perhaps Queen’s), the differences between these institutions, less prominent research universities, and lower-tier teaching institutions is comparatively small.”³² “In Canada, a national market for universities does not exist as it does in the United States. Students generally go to university locally, or they go to the United States,” this sociologist adds. “Canadian universities are not dominated by an American style ‘test’ culture where competitive SAT exams or GRE’s are central to the admission process.”³³

Canadian universities experienced a 4.6 percent enrollment increase between 2008 and 2009; full-time graduate student enrollment increased 7.2 percent.³⁴ These universities attracted 136,500 graduate students, along with 7,000 full-time international students, and 733,500 undergraduates.³⁵ Doctorates in science complete their studies faster in Canada’s research-intensive universities than in their U.S. counterparts.³⁶ Canada’s investment in public higher education has paid substantial dividends, yielding greater scientific capacity and intellectual productivity for the size of its academic system. Canadian professors have produced significant educational accomplishments.

Yet, fierce turf wars lie beneath the surface as academic disciplines compete for cultural, institutional, and political legitimacy within intellectual spaces or institutional domains that signal fiscal infrastructures.³⁷ Provincial contexts, ideological complications, and the residuals of colonial cultural hegemony exacerbate these perennial academic pursuits.³⁸

WORKLOAD AND PRODUCTIVITY: THE CONTOURS

Academic work does not occur in a vacuum.³⁹ Canadian and American universities grapple with the same set of issues.⁴⁰ The same social and technological forces influence the internal dynamics of both systems: market segmentation, occupational trends, economic fluctuations,

institutional differentiation, and fragmentation and adaptation. So do unpredictable uncertainties. Each system must engage diverse demographic stakeholders plus unequal interests, power, and utilities.⁴¹ Leadership and coalitions matter in framing policy issues and norms.⁴² Discrimination, especially affecting the status of women professors, is a ubiquitous concern for those who champion genuine meritocracy. Social networks abound in every academic system.⁴³

International occupational markets and the existence of two dominant languages (English and French) have influenced the Canadian academic marketplace.⁴⁴ So have fluctuations associated with a “brain drain” and a “brain gain” in particular disciplines.⁴⁵ And so have issues related to national identity, institutional expansion, and professionalization.⁴⁶ During the 1960s and 1970s, for example, the Canadianization movement was designed to increase the number of indigenous Canadian citizens who were university and college faculty.⁴⁷ The Canadian Association of University Teachers (CAUT)—Canada’s faculty union—played a pivotal role in upgrading the professional standards and reward structures for professors during this period.⁴⁸

Before the 1990s, research on higher education did not focus on faculty unionization, curriculum, the federal role, finances, the status of women, minorities (especially aboriginal peoples), Quebec separatism, or the brain drain.⁴⁹ But during that decade, evidence emerged that Canadian colleges and universities suffered from uneven quality—a result of corporatization, conflicting political and ideological agendas, and fiscal austerity. To improve academic quality, the Canadian government authorized 2000 research chairs within universities and invested \$900 million to implement the program.⁵⁰ We have yet to assess how disciplinary and external forces are affecting this federal initiative.⁵¹

History, policies promoting access, global research markets, resource dependencies, and accountability mandates are now transforming Canadian universities.⁵² Especially salient is the growing pressure for faculty to acquire

research grants.⁵³ In 2007, “\$10.4 billion dollars was invested in university research.”⁵⁴ Grantsmanship and the attendant survivalist ethic affects hiring and promotion, institutional finances and status, and social relations—a cancer to collegiality. Academic capitalism may be circumventing faculty autonomy and undermining collective bargaining.⁵⁵ External agencies, protocols, norms, and agents increasingly adjudicate academic quality, while administrators act as liaisons. Instrumentalism and factionalism may sabotage substantive, critical ideas by reinforcing the influence of academic dilettantes or charlatans. Academic integrity is endangered.⁵⁶

A related problem: A study of universalism, ascription, and academic rank in Canadian universities between 1987 and 2000 found “members of visible minority groups make up 10.3% of university faculties.” It also noted a paucity of minority women.⁵⁷ Achievement had a greater effect than ascription in faculty placements at higher ranks. But “the hypothesis that minority statuses, particularly that of female position, are disadvantaged in placement to higher ranks is also supported.”⁵⁸ The finding that “rank placement depends more on seniority and good citizenship than on publications” challenges sociologist Robert Merton’s concept of universalism in science, particularly with respect to women professors in Canada.⁵⁹

WORKLOAD AND PRODUCTIVITY: PATHWAYS AND POSSIBILITIES

A projected enrollment increase—the Canadian demographic curve has not peaked—combined with the demand for university research implies sustained growth for faculty, student funding, and sponsored studies. A 2007 report posited three possible growth scenarios for Canadian faculty, depending on rates of enrollment expansion and faculty retirements.⁶⁰ Faculty ranks would grow from 40,800 to 44,500 under the nine percent scenario, to 50,100 with a 16 percent growth rate, and to 54,400 with a 33 percent increase.

Table 1 lists prior periods of faculty expansion. Hiring for Canadian professors hit bottom in the mid-1990s. Student enrollments increased an estimated 56 percent between 1987 and 2006, but growth in full-time faculty positions increased by only 19 percent. Salary increases also lagged.

There’s now a relative balance between full professors (36 percent), associate professors (31 percent), and assistant professors or lecturers (33 percent). Professors are distributed respectively within the social sciences (11,200 full-time members), health sciences (6,800), humanities (6,300), and physical sciences plus mathematics (5,300). Canadian faculty had an average age of 49, with the youngest faculty (39.5 years) employed in the social sciences.

Universities must replace half of their current faculty (about 21,000 professors) in this decade, though attrition rates among the provinces will vary.⁶¹ Impending retirements will create opportunities for women faculty members. Their numbers increased to 13,400 in 2006, nearly 33 percent of all professors. But they are still disproportionately relegated to lower academic ranks: assistant professors (40 percent), associate professors (36 percent), and full professors (20 percent). Women will likely replace retiring male professors disproportionately, and therefore become a major component of Canada’s professoriate.⁶²

Growth requires Canadian academics to modify strategies for recruitment, retention, student engagement, pedagogy, research, administration, public service, and teaching.⁶³ The requirement to pursue grants and collaborative research is especially demanding. As in the United States, academic employment has shifted toward contingent or part-time appointments.⁶⁴ In 1999, “Only 15.9% of university professors were non-permanent. By 2005, this proportion had doubled to 31.7%.”⁶⁵ Also in 1999, “just 8.9% of university educators were working part-time; by 2005, this had nearly doubled to 17.5%.”⁶⁶ The fastest growing proportion—nearly 24%—was faculty over 55.⁶⁷ This growth comes as

Table 1. Faculty Growth in Canadian Universities and Colleges, 1955–2007

Time Period	Trends in Faculty Growth
Mid-1950s–Mid-1970s	From 6,000 faculty in 1955 to 14,000 in 1965 and 30,000 in 1974. Skewed age structure: Half of all full-time faculty were in early stages of their careers.
1976–1992	From 28,500 to 37,200 full-time faculty; rate of growth slowed. Unexpected strong enrollment growth between 1981–1992 stimulated increased student-faculty ratios.
1992–1998	A ten percent decline in full-time faculty numbers due to retirements and hiring restraints (higher departure rates). Funding cutbacks, and lack of enrollment growth. Concerns about quality; rising student-faculty ratios.
1998–2007	Reinvestment in universities; faculty ranks increase by 21 percent. Enrollment grew by 37 percent, increasing student-faculty ratios from 17.2:1 in 1998 to 19:1 in 2007.

Source: Association of Universities and Colleges of Canada, 2007, 11–12.

Canadians debate the abolition of mandatory retirement for senior faculty—a source of tension between permanent and limited-term full-time faculty.⁶⁸ Full-time professors averaged a 46.4-hour workweek.⁶⁹ Limited-term full-time faculty “reported 15 to 21 hours per week in the classroom; 27 to 36 hours per week outside of class but teaching related; and 11 hours per week in research.”⁷⁰

Faculty unions arose where the marginalization of faculty members resulted in low, inadequate salaries and ineffectual governance.⁷¹ These unions must continue to address concerns about working conditions, productivity, and salary increases, given the investments in universities and a move toward private sources of funding.⁷² They may also increase their influence by generating knowledge about Canada’s academic system, its professoriate, and its compensation levels. They should foster the democratic collaboration needed to achieve national aspirations and foster a spirit of innovation, while supporting faculty rights.⁷³ Last, they must also cope with the powerful forces affecting academic systems globally.⁷⁴

POLICY ISSUES

Canada’s academic system is not a clone of the United States.⁷⁵ Universities and community colleges occupy separate spheres of attention in this “binary higher education system.”⁷⁶ Despite provincial government jurisdiction over higher education policy, the national government takes an active, though indirect, role in shaping postsecondary education in skills improvement, student financial aid, federal-provincial transfers and research and development.⁷⁷ It assigns intermediary organizations to monitor activities in each domain: the Canadian Foundation for Innovation, Workplace Skills Strategy, and Canadian Council for Learning.⁷⁸ Differing agendas among stakeholders and the designated federal agencies affected Canada’s decade-long quest to build a knowledge society. Along with competing strategies or outcomes, scholars note tensions between quality and purpose, and human capital versus actor-network theories.⁷⁹

The national government increased its influence by investing billions of dollars to boost academic innovation and productivity.⁸⁰ For

example, it has doubled the funding for the Canadian Institute of Health Research since 1999. Government support created 2,000 research chairs at Canadian universities, and expanded scholarships for graduate study.⁸¹ It also covered indirect costs for select institutions.⁸² These funding increases link scientists into networks, promote knowledge transfers, and underwrite research. Canada has entered the global “space race” for knowledge and innovation.

Life was not always this way. This cash infusion counteracted the drastic deficit-reduction tactics of the 1990s: decreased federal support for provincial governments, reallocated funding streams, and cost shifts to institutions and students.⁸³ By one estimate, per-student funding decreased nearly 50 percent between 1994–95 and 2004–05. Universities, in competition with other social welfare agencies, receive 38 percent of the Canada Social Transfer allocation. In contrast, they receive 62 percent of the Canada Health Transfer allocation.⁸⁴

Privatization and commercialization replaced public investments in student access and college affordability.⁸⁵ Ironically, these shifts occurred apart from evidence, despite political insistence on measuring outcomes for professors.⁸⁶ Such shifts may lead to specious results, as did the massive federal tax cuts aimed at ushering in prosperity in the United States.⁸⁷ It remains to be seen whether any nation that reduces public investment or promotes public disinvestment can enhance the common welfare.⁸⁸ In any case, the indicators available to measure the effectiveness of policy interventions in the Canadian academic system fail to account for the impact of social networks and their consequences.⁸⁹ What policies work? Where and why? Under what conditions, and with whom?

Provincial-level decisions affect local universities idiosyncratically, though the Council of Ministers of Education attempts coordination and fosters collaboration.⁹⁰ Different histories, social structures, resources, and cultural proclivities intermingle with ideological and political factors as the provinces adjudicate institutional,

market, and systemic problems within a competitive national and global milieu.⁹¹ The provinces exert more control over community colleges than universities.⁹² But community colleges in some provinces are university feeders; elsewhere they focus on vocational preparation or are hybrids.⁹³ Institutional fluidity coupled with diversity is the emergent paradigm.⁹⁴

IMPLICATIONS

Canada and the United States face different global challenges and internal demographic problems.⁹⁵ Moreover, few can ignore the intellectual impact of the United States academic system on Canadian higher education.⁹⁶ Likewise, some technical, organizational, and professional differentiation is axiomatic in Canada’s system.⁹⁷ Before now, “there has never been a national accreditation or program assessment mechanism in Canada.”⁹⁸ This absence may end, given the worldwide emphasis on accountability, as universities expand and differentiate.⁹⁹ Institutional flatness may also become anachronistic.

Coordination between provinces, intermediary bodies, and institutions of higher education is ripe for investigation as evolution occurs beyond sectors toward systemic trends.¹⁰⁰ So are such themes as decentralization, privatization, markets, access, diversity, efficiency, accountability, globalization, productivity, competition, institutional quality, tech transfers, partnerships, fluidity, and innovation. Also ripe for study: power differentials between the national government and its provinces, within provinces, and across universities and academic disciplines.¹⁰¹ We’ve already noted the need for studies of equity in academic labor markets, promotion, and tenure. Canada’s academic system may be devolving from relative equity toward increased stratification.¹⁰² The quality of expertise embraced by its government will influence societal outcomes.¹⁰³ One should remain skeptical about untested fads, apart from systematic evidence.¹⁰⁴ Whatever happened to the law of unintended consequences or the tragedy of the

commons with regard to political interventions in academic affairs?

Albert Einstein noted the importance of building upon a coherent conceptualization or a model of key components. Recognizing that disjointed, though correlated, empirical findings are insufficient for visualizing the most intractable discoveries, he said: “The grand aim of all science is to cover the greatest number of empirical facts by the logical deduction from the smallest number of hypotheses or axioms.”¹⁰⁵ Empirical indicators or measures need a coherent theoretical framework to identify unexpected relations, dimensions, or paradoxes; to promote effective, contingent policy interventions, and to uncover an academic or social system’s mysteries.¹⁰⁶

We have yet to identify formal and informal social networks within and across global academic systems.¹⁰⁷ Citation rates, which can resemble epidemiological contagions, are inadequate indicators unless we know the motives for citation or their ability to point us towards genuine scientific breakthroughs.¹⁰⁸ Description does not foster deep understanding.¹⁰⁹

Every academic system has an implicit structure that must be analyzed globally.¹¹⁰ We need a social physics that probes these systems akin to how astrophysicists probe distant solar systems—using empirical findings to validate or refute hypotheses.¹¹¹ The drive toward global equity among nations demands this accomplishment. Canada could provide a model for societies with small populations that must accomplish more with less.¹¹² Understanding the dynamics of the Canadian system may upend the traditional academic hierarchy.¹¹³

THE CANADIAN AND U.S. SYSTEMS COMPARED

Citizens can ignore or exaggerate their nation’s achievements, problems, and possibilities. Conditions become even more polemical or risky when comparing different countries. So we compare the Canadian and U.S. academic systems, with their different histories, economies,

and structures, only for heuristic purposes.¹¹⁴ These differences permit only a few macroscopic comparisons, especially when attempted by a nonresident scholar.¹¹⁵ Add to this the differences in the ways each nation mediates social class disparities.¹¹⁶ Therefore, such comparisons are subject to the normal distribution in content, range, and conditions, as well as historical accidents and chance events.¹¹⁷ Yet, they satisfy our curiosities and stimulate our collective imaginations.

Canadian universities and their faculties must negotiate the terrains of ten provinces differentiated by social complexity (organizations, institutions, markets, industries), political economy (power, control, statuses, systems of authority and legitimization), social composition (networks, ethnicities), and ideological clienteles (laws, norms, leitmotifs, popular trends).¹¹⁸ The codification of knowledge, assessment rubrics, and other measures are contested across intra-organizational and inter-organizational domains among social agents, networks, and collectivities.¹¹⁹ The rise and fall of academic disciplines and departments continues unabated.¹²⁰ Canada must avoid the policies that have plunged other societies into economic collapse.¹²¹ Figure 2 compares the social forces acting upon the Canadian and American academic systems.

CONCLUSION

Canada has accomplished much, given its climate, diversity, massive geography, and small population.¹²² Yet Canadian faculty may suffer from an inferiority complex when they look at their U.S. colleagues.¹²³ This is unfortunate, because their robust scientific discoveries stand on their own.¹²⁴ One caution as Canada enters the uncharted waters of globalization: “Canada has a demonstrable shortage of skilled workers and professionals that will become more acute as the work force ages.”¹²⁵

Optimists believe the worst of the Great Recession is over.¹²⁶ But some analysts remain skeptical because Canada has a mediocre level

Figure 2. A Heuristic Comparison of Academic Systems and Concerns

Academic System	Theoretical Concerns	Methodological Concerns	Policy Concerns	Practical Concerns
Canada	Impact of university research and global science Leveraging its uniqueness among global academic systems Loss of professional control over core facets of academic work	Complexity of ten provinces Social network data Complex systems concepts Research vs. discoveries: cost-benefit ratios Untested policy interventions Political or ideological fads	Public investment Internationalization Faculty diversity Institutional flatness Federal interventions and agencies Gender Law of unintended consequences Tragedy of the commons (collapse)	Expansion Multiculturalism New survivalism Increased research funding Enhanced research infrastructures Institutional precariousness Corporatization
United States	Maintaining its core status in a more competitive global arena Brain gain, not brain drain Loss of professional control over core facets of academic work	Social network data Complex systems concepts: criticality Untested policy interventions Political or ideological fads	Privatization Commercialization Market segmentation Law of unintended consequences Tragedy of the commons (collapse)	Affordability Cost containment Assessment Lack of vision

of research and development investments from the business sector, according to OECD or G8 indicators.¹²⁷ Academic leaders must better inform provincial and national stakeholders of the values and contributions of higher education.¹²⁸ At the same time, they must always protect faculty welfare and academic freedom.¹²⁹

Canadian professors must promote the nation's imperatives, uniqueness, and scientific and intellectual capital.¹³⁰ All societies may learn from Canada's mosaic federation, especially how it resolves its oscillations between public investment and market incentives.¹³¹

NOTES

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¹ Wagner, 2008. Caroline Wagner listed Canada only second to the United States in a ranking of the scientific capacity of 76 nations. According to Wagner, "scientific capacity involves absorbing, applying, creating, and retaining knowledge about the natural world."

² The Canadian Constitution accords the ten provinces—Newfoundland and Labrador, Nova Scotia, New Brunswick, Prince Edward Island, Quebec, Ontario, Manitoba, Saskatchewan, Alberta, and British Columbia—more sovereignty and powers than the three territories—Yukon, Northwest Territories, and Nunavut.

³ Shanahan and Jones, 2007.

- ⁴ David Robinson provided these insights (July 2010).
- ⁵ No article can do due justice to the complexities of the Canadian academic system. Our aim is to examine macroscopic concerns affecting university and college faculty. Future research will examine faculty workload and productivity in community and four-year colleges at the provincial level.
- ⁶ *Canadian Speeches*, 2003.
- ⁷ Within the service sector, Canada's citizens benefit from a strong national healthcare system. See Kunitz and Pesis-Katz, 2005; Keating and Hertzman, 1999.
- ⁸ Bibby, 1990.
- ⁹ "Canada: A Pluralist History," 2003.
- ¹⁰ "In Canada...," 2008. Blacks in Canada average more education than whites.
- ¹¹ Christian Orthodox, 1.6 percent; other Christian, 2.6 percent; Muslim, 2.0 percent; Jewish, 1.1 percent; Buddhist, 1.0 percent; Hindu, 1.0 percent; Sikh, 0.9 percent; no religion, 16.2 percent.
- ¹² "Canada," 2009.
- ¹³ Robertson, 2005.
- ¹⁴ "Canada," 2009.
- ¹⁵ Bibby, 1990.
- ¹⁶ Robertson, 2005.
- ¹⁷ Dei, 2005.
- ¹⁸ Canadian Education Statistics Council, 2009.
- ¹⁹ Clement, 2001.
- ²⁰ Correspondence with Dr. David Robinson. See also Skolnik, 1997.
- ²¹ Science, Technology, and Innovation Council, 2008. Similar documents preceded this report.
- ²² Ibid.
- ²³ Ibid.
- ²⁴ Ibid.
- ²⁵ Ibid.
- ²⁶ Ibid.
- ²⁷ Sharpe 2010a, 2010b, 2003, 2001; Osberg and Sharpe 2009 echo these themes.
- ²⁸ Science, Technology, and Innovation Council, 2008; Council of Canadian Academies, 2010; Association of Universities and Colleges of Canada, 2002, 2005, 2008a, 2008b, 2009, 2010.
- ²⁹ Lorna Marsden via correspondence, July, 2010.
- ³⁰ Ibid.
- ³¹ Ibid.
- ³² McLaughlin, 2005.
- ³³ Ibid.
- ³⁴ Total enrollments increased 4.6 percent; undergraduate enrollments rose 4.1 percent.
- ³⁵ Charbonneau, 2009.
- ³⁶ Strauss, 2007.
- ³⁷ McLaughlin 2005.
- ³⁸ Jones, 1997.
- ³⁹ Newman, Barabasi, and Duncan, 2006.
- ⁴⁰ Baer, 2005.
- ⁴¹ Bibby, 2009.
- ⁴² Cormier, 2005.
- ⁴³ Krause, Croft, and James, 2007.
- ⁴⁴ Scarfe and Sheffield, 1977.
- ⁴⁵ Hiller, 1979.
- ⁴⁶ Ibid.
- ⁴⁷ Cormier, 2005.
- ⁴⁸ Ibid.
- ⁴⁹ Cutright, 1998.
- ⁵⁰ Siler and McLaughlin, 2008.
- ⁵¹ Albert, 2003.
- ⁵² Weinrib, 2010.
- ⁵³ Polster, 2007.
- ⁵⁴ Association of Universities and Colleges of Canada, 2008.
- ⁵⁵ Turk, 2000.
- ⁵⁶ Ibid.
- ⁵⁷ Nakhaie, 2007.
- ⁵⁸ Ibid.
- ⁵⁹ Canadian Federation of University Women, 2010.
- ⁶⁰ Association of Universities and Colleges, 2007.
- ⁶¹ Ibid.
- ⁶² Ibid. See also Sussman and Yssaad, 2005.
- ⁶³ Ibid.
- ⁶⁴ Rajagopal and Farr, 1992; Rajagopal, 2004.
- ⁶⁵ Lin, 2006.
- ⁶⁶ Ibid.

- ⁶⁷ Ibid.
- ⁶⁸ Association of Universities and Colleges of Canada, 2007; Rajagopal, 2004.
- ⁶⁹ Lin, 2005.
- ⁷⁰ Rajagopal, 2004.
- ⁷¹ Horn, 1994.
- ⁷² Canadian Association of University Teachers, 2009.
- ⁷³ Turk, 2000.
- ⁷⁴ OECD, 2007.
- ⁷⁵ Gregor and Jasmin, 1992.
- ⁷⁶ Metcalfe and Fenwick, 2008.
- ⁷⁷ Shanahan and Jones, 2007.
- ⁷⁸ Metcalfe and Fenwick, 2008.
- ⁷⁹ Ibid.
- ⁸⁰ Shanahan and Jones, 2007.
- ⁸¹ Ibid.
- ⁸² Ibid.
- ⁸³ Ibid.
- ⁸⁴ Ibid.
- ⁸⁵ Ibid.
- ⁸⁶ Stecher, et. al., 2010.
- ⁸⁷ Royal Society, 2010.
- ⁸⁸ Chang, 2008.
- ⁸⁹ Erdi, 2008.
- ⁹⁰ Shanahan and Jones, 2007.
- ⁹¹ Skolnik, 2010.
- ⁹² Ibid.
- ⁹³ Ibid.
- ⁹⁴ Colecchia and Schreyer, 2002.
- ⁹⁵ Canadian Federation for the Humanities and Social Sciences, 2010; Kim, 2009. They, of course, also face some common challenges, such as immigration. See Kawano, 2006.
- ⁹⁶ Shore, 1987.
- ⁹⁷ McLaughlin, 2005.
- ⁹⁸ Shanahan and Jones 2007.
- ⁹⁹ Skolnik, 2005.
- ¹⁰⁰ Ibid.
- ¹⁰¹ Miller and Page, 2007.
- ¹⁰² Thompson, 2008.
- ¹⁰³ Ibid.
- ¹⁰⁴ Goldin and Katz, 2008.
- ¹⁰⁵ Calaprice, 1996.
- ¹⁰⁶ Hedstrom, 2005.
- ¹⁰⁷ Joshee, 2008.
- ¹⁰⁸ Sawyer, 2005.
- ¹⁰⁹ Hadlock, 2007.
- ¹¹⁰ Porter, Onnela, and Mucha, 2009; Ekeland, 1996.
- ¹¹¹ Rose, 1998.
- ¹¹² Social Sciences and Humanities Research Council of Canada, 2010.
- ¹¹³ Lax, 2008; Chavalarias and Cointet, 2009.
- ¹¹⁴ Weidlich, 2000.
- ¹¹⁵ O'Hagen and Green, 2002; Chekki, 1987.
- ¹¹⁶ Horn, 2000.
- ¹¹⁷ Thomas, 1993.
- ¹¹⁸ Tindall and Wellman, 2001.
- ¹¹⁹ Metcalfe and Fenwick, 2008.
- ¹²⁰ Brym, 2003.
- ¹²¹ Diamond, 2005.
- ¹²² Lee and Hiebert, 2006.
- ¹²³ Siler and McLaughlin, 2008.
- ¹²⁴ Royal Society, 2010.
- ¹²⁵ Science, Technology, and Innovation Council, 2008; Robertson, 2005 (source of quotation).
- ¹²⁶ *Manilla Bulletin*, 2009.
- ¹²⁷ Mann, 2009.
- ¹²⁸ Royal Society of Canada, 2010.
- ¹²⁹ Turk and Manson, 2007; Bruneau and Turk, 2004; Healy, 2003; Bruneau and Savage, 2002; Thompson, Baird, and Downie, 2001; Turk, 2000; Tudiver 1999.
- ¹³⁰ Jones, McCarney, and Skolnick, 2005.
- ¹³¹ Trilokekar, Jones, and Shubert, 2009.

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