CanadaWatch

Director's introduction

BY JEAN MICHEL MONTSION

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The Robarts Centre for Canadian Studies is proud to introduce this issue of *Canada Watch*, which builds on a special collaboration between Canadian and Indian researchers. The Robarts Centre's mandate emphasizes the importance of interdisciplinary and collaborative research to deepen our understanding of Canada and its place in the world. The current issue of *Canada Watch*, and the underlying collaboration with the York Centre for Asian Research—another organized research unit of York University—from which it emerges, embody well the spirit through which the Robarts Centre came into existence.

This issue of *Canada Watch* builds on a keen interest within the Robarts Centre's community for knowledge and research-based reflections on Indo-Canadian relations; our 2012 issue on India focused also on topics linking Canadian Studies to India. Through the

CO-EDITOR'S INTRODUCTION

Facing the future together: Exploring new pathways for Canada-India collaborations

BY NIVEDITA DAS KUNDU

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Canada and India have long-standing bilateral relationships built on shared traditions of democracy, pluralism, strong interpersonal connections. The two countries have embarked on a process aimed at improving and expanding their bilateral ties. This issue of *Canada Watch* is part of the research conducted by the Canada-India Project for Research and Innovation (CIPRI).

LONG-STANDING BILATERAL RELATIONSHIPS

CIPRI aims to promote awareness between two major democracies, Canada and India. Its objective is to promote understanding about multicultural, multi-ethnic, and multilingual societies. CIPRI seeks to improve and expand synergies through academic activities and assist with networking. It promotes unconventional and multifaceted thinking by examining challenges and bringing forth new visions and innovative ideas. The academics, scholars, and policy-makers from India and Canada who contributed to this issue of *Canada Watch* provide interdisciplinary approaches and comparative perspectives. Their writings help us understand how to enhance the scope of cooperation and engagement between the two nations. Our aim is to highlight existing research and collaboration between Canada and India and to articulate the factors underpinning success, as well as to identify bottlenecks and challenges. This publication also recognizes future possibilities and emerging opportunities between Canada and India. Our objective is to bring together ideas to identify partnership opportunities and to develop the appropriate and relevant policies to changing and challenging circumstances.

The contents of this issue are listed in the Features box on page 2.

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Mapping Pathways for Canada-India Collaborations: Preserve, Share, and Explore

FEATURES

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Facing the future together

This publication attempts to explore how to build better long-term relationships between the two nations. Issues of collaboration around research, resource building, knowledge sharing, and innovative processes are covered in the articles. The writings, generated out of goodwill, collegiality, and blue-sky thinking, explore ways of overcoming challenges effectively, seizing opportunities, and developing them through information sharing. The articles reflect both India's and Canada's principles of democracy and multiculturalism in multilingual societies. Both nations believe in the merits of free trade and a proactive policy of sustainable development.

Canada is a preferred destination for Indian immigrants because of its safe, law-and-order civil society and its educational system. Indian communities have played a critical role in the life of all political parties in Canada. Today, Canada has several provincial and federal politicians from the Indo-Canadian community. Indian immigration to Canada over the last 60 years has made a significant contribution to the transformative goal of Canadian multiculturalism. Immigration is seen through a positive lens for supporting diversity as a foundational part of modern Canada. Many experts believe that the Indian diaspora is unique because of the skills, education levels, and strong work ethic of Indian immigrants. It could be said that these characteristics have enabled them to integrate quickly into Canadian society. In addition to being self-organized, they are often able to assist each other in the long and sometimes difficult settlement process.

SCIENCE AND TECHNOLOGY PARTNERS

India and Canada have a long history of scientific and technological collaboration, which includes working on specific areas of research including such global issues as climate change and infectious disease control. The India-Canada Collaborative Industrial Research &

Development Program was established in 2017. Space and nuclear technologies constitute a significant collaboration between the two nations. A review of the history and status of these projects suggests that future partnerships in projects related to nanotechnology, biotechnology, and space research, among others, are very likely. Other areas of common interest include technologies for social development, in such areas as green technology, water technology, and agricultural technology. Although India is a developing nation, it has invested heavily in Canada over the last 20 years. India's gross domestic product is still much lower than Canada's, but in overall terms India has a very large economy today. By 2030, the Indian economy is expected to be ranked among the top three in the world. Since 2016, two-way trade between India and Canada has increased by 22 percent, but it is still below what can be achieved. It is expected that Indian and Canadian agencies will continue to work together and reap benefits at many levels.

India and Canada do not compete against each other, but rather complement each other. However, there is an urgent need to inject more energy and commitment into the relationship. The articles in this issue of *Canada Watch* provide valuable and timely insight into the contours of India and Canada, highlighting the strong complementarities between the two nations and beyond. The authors touch upon various aspects of the relationship and provide insight into diverse issues. However, they also indicate that the current level of interaction is far below its potential. Areas of challenge and opportunity are discussed and analyzed in the articles. It is our hope that this CIPRI publication, covering different dimensions and shared perspectives, will help promote the synergies in Canada's ties with India for the benefit of both nations. ◆

Canada India Project for Research and Innovation inaugural symposium, "Facing the Future Together: Exploring New Pathways for Canada-India Collaborations," October 13, 2017.

Complementarities driving India-Canada relations

BY DINESH BHATIA

Dinesh Bhatia is the Consul General of India in Toronto.

Canada and India are two major democracies with deeply shared values. Very few countries in the world can match Canada's potential to be a partner in India's economic transformation. India's new economic environment, characterized as open, predictable, stable, and easy to do business in, is recognized as one of the most competitive in the world. India provides a strong talent pool in the areas of science, technology, and research. India enjoys cost efficiency in manufacturing, and its labour costs are among the lowest in the world.

THE "INDIA" OPPORTUNITY

India has emerged as the fastest growing economy in the last three years, with a growth rate in its gross domestic product of more than 7 percent. According to the International Monetary Fund, India is likely to grow at consistently higher rates (7 percent) and retain its position as one of the fastest-growing economies till 2020. Around 87 foreign direct investment (FDI) rules across 21 sectors have been eased to accelerate economic growth in areas such as defence, construction, research and development, pensions, broadcasting, pharmaceuticals, and civil aviation. Barring a few reserved sectors, 100 percent FDI is allowed through the automatic route in several sectors, without the need for government approval, including automobile manufacturing, food processing, and construction. Today, India is home to more than a thousand research and development centres of multinational corporations.

India is at the threshold of major reforms and is poised to become the third-largest economy of the world by 2030. The government is increasing its infrastructure spending. There are plans to connect Delhi and Mumbai, as well as 24 "smart" cities, with a high-speed railway, in what is touted as the world's largest infrastructure project. Booming start-ups in India are creating jobs and providing employment to millions of millennials.

TRANSFORMING THE COUNTRY WITH TECHNOLOGY

The Aadhaar project, an initiative of the Unique Identification Authority of India (UIDAI), was started in 2010 with the aim of providing a unique 12-digit identifier, called the Aadhaar number, to India's 1.3 billion people. It is the best example of how modern technology is being used to jump-start the future development and transformation of a country. The government set up the Aadhaar program for two principal reasons: to give everybody a unique ID so that they can participate in the modern economy; and to ensure that the numerous welfare benefits offered to individuals are passed to the intended beneficiaries. Aadhaar provides online fingerprint or iris authentication, which can be done from anywhere. This system can make transactions "presenceless." The move to a cashless economy will be accelerated by Aadhaar-enabled biometric smart phones.

Today, nearly 1.18 billion people have been assigned a unique ID. Smartphone ownership is growing dramatically and is expected to reach a penetration level of 700 million by 2020. With the Reserve Bank of India (RBI) giving licences to more than 20 new banks, the competitive intensity of the financial services sector is set to increase. One can visualize a future where every Indian adult has an Aadhaar number, a smart phone, and a bank account.

Finally, as the Indian economy goes from being data-poor to data-rich in the next few years, the electronic consent aspect of the Aadhaar program will enable consumers and businesses to harness the power of their own data to

Community Conversation with State Bank of India and Consulate General of India in Toronto, February 2017.

Canada-India academic relations: What's next?

BY SHEILA EMBLETON

Dr. Sheila Embleton, FRSC, is Distinguished Research Professor of Linguistics at York University, Toronto, and a former president of the Shastri Indo-Canadian Institute. Her interest in India stems from her time serving as Vice-President Academic and Provost at York University (2000-2009).

Although Canada and India have much shared history and commonality in university organization, the history of Canada-India academic relations is short. Before the early 2000s, there were the Colombo Plan, the Canadian International Development Agency (CIDA), and the Shastri Indo-Canadian Institute. Since then, coinciding with India's rapid rise to world prominence, there has been a parade of government and university delegations, as well as memoranda of understanding addressing exchanges and deeper relationships. This history is summarized briefly below. But how much real relationship actually is there, and who or what is really supporting it? What are the current realities and challenges, and what is the way forward?

THE PAST

Many aspects of Canada's academic relations with India are similar to those of any "Western," especially anglophone, country. India shares a British colonial history with Canada, although its experience differs in some important ways. After Independence in 1947, the pattern of young men travelling to England for university continued, as it did elsewhere in the British Empire. Gradually, some of that traffic shifted to the United States. There was almost no student mobility between Canada and India. Faculty mobility was individual rather than institutional, typically involving Canadians interested in some aspect of India (for example, Sanskrit, religion, anthropology, history, British colonial and military history, or the arts), and Indians interested in Canadian literature, political or legal systems, or colonial history. The two groups seldom shared mutual academic interests, which minimized prospects for direct interaction or longer-term relationships. There was some government funding (for example, the Colombo Plan, the Canadian Studies Program, the Commonwealth Scholarship Program, and, from 1968, the Shastri Indo-Canadian Institute Fellowships). At this time, the Shastri Institute was based in Calgary, with a subsidiary office in Delhi. Many Indian post-doctoral fellows came to Canada, many in STEM fields (science, technology, engineering, and mathematics). However, few Canadians went to India with funding from development programs, which reinforced the view that Canada was a developed country helping India, an un(der)developed country. Canada has never committed to any large-scale academic programs like Fulbright in the United States or DAAD (German Academic Exchange Service), so the Canadian government has no "soft power" approach (with respect to India or any other country). The Indian government also did not commit funding beyond what it was receiving as aid. Unfortunately, Canadians generally viewed India as an underdeveloped, poverty-stricken, inefficient, corrupt, disease-ridden Third World country in the Soviet sphere. Coupled with specific political issues after India's 1974 nuclear test (allegedly using material from a Canadian-supplied research reactor), it meant few Canadians had any urge to travel to India. Travel was also time-consuming, difficult, and expensive, with the best season for Canadians to travel to India coinciding with the teaching part of the academic year in Canada, so it was difficult to be away for long enough to justify the difficulty and expense of the journey. As a result, Canada-India academic relations were minimal and ad hoc.

This began to change in the late 1990s. Relationships broadened, slowly at first and then more rapidly. This happened first through development studies, which then became more broadly construed, going beyond development work into women's issues, environmental concerns, children's rights, literacy education, health and nutrition, and related legal aspects. Much of this, including crucial visits in both directions, was funded by the Canadian government through CIDA; India remains one of CIDA's priority countries. The relationship was still "us" transferring knowledge to "them," whether the transfer occurred in India or Canada. The pressure to broaden fields came from individual researchers rather than from government policy. The Shastri Institute was still the only organization operating in this area; there was little at the institutional level.

Since 2004, interest in India has increased dramatically—partly due to the sudden interest in the BRIC nations (Brazil, Russia, India, and China), especially because of increased trade opportunities. Expanded trade requires graduates knowledgeable about these countries, economies, languages, cultures, and ways of life. Canada was fortunate that much demand could be satisfied by the large Indian diaspora resident in Canada, but there was interest beyond the diaspora as connectors. Specifically, in the educational sphere, governments and post-secondary institutions saw possibilities for revenue generation, both directly (through fees) and indirectly (through economic impacts in the communities where international students live and study). Recruitment, though, does not lead to institutional or

Canada-India academic relations

research relationships. In fact, at times it can be negative, if an institution thinks that another institution is visiting only to poach its students, often its best students.

EARLY LINKAGES

The Canadian institutions that had early or significant academic and research linkages with India are summarized below. (For a fuller account, see Embleton, 2013.)

York's Schulich School of Business was an early leader in exploring relationships in India. As early as the 1980s, Schulich pursued a global perspective before it was fashionable, with relationships with IIM-Ahmedabad, IIM-Bangalore, and ISB-Hyderabad. These efforts culminated in a Schulich campus in Mumbai (now moved to a purpose-built facility in Hyderabad) for an MBA cohort beginning in January 2010. York University's overall India strategy began with my own work as VP Academic and Provost in the mid-2000s, substantially supported by Dr. Roopa Desai Trilokekar (at the time senior staff in the Associate Vice-President International's Office and now Associate Professor of International Education). This work resulted in relationships with Jadavpur, Jawaharlal Nehru University, IIT-Bombay, BITS-Pilani (including its campuses in Pilani,

Goa, Hyderabad, and Delhi), Madras, and St. Xavier's College (then part of University of Mumbai). These were chosen for reputation, fit with York University, regional distribution, etc., sometimes growing from individual faculty contacts and relationships. Others (for example, law schools) came later, based on similar principles.

Other early entrants between Canada and India included:

- Richard Ivey School of Business (Western University). Professors at Ivey have written up many Indian case studies, which they then use in their instruction and make available to others. Many of these are also disseminated in India. Ivey also does executive education for some major Indian companies.
- Carleton University offered a Bachelor of Business Administration (BBA) with Koh-i-Noor Business School in Navi Mumbai. From 2010, Carleton began intense engagement—for example, establishing the Canada-India Centre for Excellence in Science, Technology, Trade and Policy, with significant Indian diaspora involvement and fundraising.
- University of Toronto, with the India

Innovation Institute in 2011 (Rotman School of Management, Munk School of Global Affairs), whose current prominence does not match the fanfare and press coverage around its opening.

- Simon Fraser University, with a well-thought-out and appropriate institutional strategy linked to the local diaspora community and fundraising.
- University of British Columbia (UBC), with a Delhi office; IC-IMPACTS (India-Canada Centre for Innovative Multi-Disciplinary Partnership), together with the universities of Toronto and Alberta later winning federal funding through the Canada-India Research Centre of Excellence (CIRCE); and a donor-driven partnership between UBC Nursing and Guru Nanak College of Nursing in Punjab.
- University of the Fraser Valley, offering its BBA, Bachelor of Computer Information Systems, and post-degree Certificate in Management in Chandigarh at an affiliated college of Panjab University, Goswami Ganesh Dutta Sanatan Dharma College; and the Centre for Indo-Canadian Studies (founded in 2006 and renamed in 2017 the South Asian Studies Institute), housing the BC Regional Innovation Chair on Canada-India Partnership Development. It should be noted that the Fraser Valley has the highest proportion of people of Indian descent of any Census Metropolitan Area in Canada.
- University of Victoria, partnering with PRIA (Participatory Research in Asia, Delhi), sending significant numbers of students to India for a full academic year, some for individual courses.
- University of Alberta, with an IIT-Bombay partnership in nanotechnology and considerable funding to facilitate mobility to support research projects.
- University of Regina, under a president with her own research interests in India, has strong recruitment in India.

Community Conversation on Dr. B.R. Ambedkar's Ideology, Philosophy and Teachings with Liberal Arts and Professional Studies, York University and AIM (Dr. Ambedkar International Mission Inc.) on October 6, 2018 (Kaneff Tower, York University).

Visions of India in Portuguese literature of the Renaissance: Brief sketches

The establishment of the sea route and subsequent conquests in India propelled Portugal into a coveted position as Europe's most powerful empire at the beginning of the 16th century. Portugal's fame, wealth, and feats are well documented. But while official accounts praise Portuguese ingenuity and heroism, writers offer other insights into a country's greed and social disorder. This brief article exposes such insights and their intersection with other important discourses of the time.

HISTORICAL CONTEXT: THE RISE OF AN EMPIRE

The establishment of the sea route and subsequent conquests in India propelled Portugal into a coveted position as Europe's most powerful empire at the beginning of the 16th century. It is common now to read that Portugal opened new worlds to the old world, that the Portuguese established the first bases of social interaction in modern times between the East and the West. Indeed, following a series of conquests and maritime explorations, the Portuguese, commanded by Vasco da Gama, arrived in India near Calicut on May 20, 1498. Reaching the land of spices was not just a Portuguese desire, it was a dream shared by all of Europe. Yet it was tiny Portugal that accomplished such a feat.

Perhaps owing to historical hostilities with neighbouring Castille, Portugal always felt the calling to venture out to the open sea. Following decades of conquest, expertise, and seafaring developments that boasted Portuguese confidence in capturing lands and oceans, Vasco da Gama's trail-blazing expedition to India gave the Portuguese world recognition. In addition to seeking Christians and serving God, as the Portuguese would say and write, the Portuguese were clearly much more interested in making profit for themselves, in getting their hands on riches

BY MARIA JOÃO DODMAN

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> India's impact on Portuguese literature was almost immediate.

that local traders possessed. Thus, by the early 16th century, Portugal had seized control of trade routes in the Indian Ocean and the Persian Gulf, by capturing several strategic sites, including Goa, which it held until 1961. Wealth began to pour into Portugal. Indian pepper and cotton were highly prized commodities. Nutmeg, mace, and cloves also generated extraordinary revenues. Although the sea voyages were long and piracy and shipwrecks were common hazards, the profits of a successful round trip to India were astronomical.

Lisbon became a vibrant and powerful city, and the Portuguese become affluent world players. They displayed their glorious new wealth in extraordinary gifts such as Hanno, a white elephant given to Pope Leo X on his coronation in 1514. In the following year, a rhinoceros arrived in Lisbon, a gift from an Indian sultan. Exuberance and extravagance characterized these early times. Even arrogance became part of official discourse, such as when a Portuguese chronicler bragged that one could learn more from a Portuguese in one

day than from a Roman in a century. However, while the Portuguese sea route to India was praised at home and in Europe as a major accomplishment, representations in literature offered varied and complex perspectives on the India adventure.

LITERARY CONTEXT: THE QUESTIONING OF AN EMPIRE

India's impact on Portuguese literature was almost immediate. In addition to returning with material wealth, navigators brought back tales of their bold travels and their attempts to control far-away seas and lands, evoking an overall fascination with the riches of India. For those looking to escape the toils of poverty, India represented a paradise of easy delights. Yet dangers lurked within these delights. Perhaps the best example was *Auto da Índia* (*India Play*), by the playwright Gil Vicente, first staged in 1509. The inspiration for the *India Play* was the expedition of Tristão da Cunha in 1506, but the story was that of those who were left behind—the women whose husbands had succumbed to the lure of India. During her husband's three-year absence, Constança, while playing the part of the devoted wife, entertains lovers in an effort to get favours from them. Her freedom is cut short by the sudden return of her husband, bearing neither riches nor fame. Contrary to official discourses, this husband is in no way a hero; rather, he is a lowly individual whose desires are motivated by greed alone. In fact, as the plot reveals, greed and corruption characterize the entire enterprise, from the captain to the most insignificant players.

In about 1537, India appears in Jorge Ferreira de Vasconcelos's comedy *Eufrosina*. India is referenced in a letter that Silvia, one of the characters, receives from her brother in Goa. It is

Visions of India in Portuguese literature

likely that this letter was inspired by real and common letters of the time. Silvia's brother speaks of troublesome voyages and promises of easy riches, much as many of those before him did, including the husband in Vicente's *India Play*. He also refers sneeringly to Indian girls. But, most importantly, the letter mentions the dishonourable behaviour of the Portuguese in India, as well as the homesickness of a disillusioned youth. The sentiment expressed earlier by Vicente is present here, but with increased anxiety and an ethical questioning of the morality of the conquest.

Luís de Camões, Portugal's most acclaimed Renaissance poet, was no stranger to the India adventure. In addition to documenting this experience in his epic poem *Os Lusíadas* (*The Lusiads*), Camões was the first European artist to make the trip to India. In fact, as the story goes, upon being shipwrecked after leaving Macao, Camões swam ashore while holding his unfinished manuscript aloft. Yet when Camões arrived in India in 1553, the corruption and greed alluded to in previous works were rampant. The condemnation of Portuguese pride and greed are well-known facets of *The Lusiads*. In a famous episode featuring a character known as the Old Man of Restelo, as Vasco da Gama and his crew prepare to

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depart for India, an old man appears and offers a harsh and foreboding criticism of the trip. The old man speaks of the illusory nature of fame and admonishes the Portuguese for leaving the nation in a state of fragility, bereft of men and subjected to possible attacks from the Moors—the enemy at the gates, as the old man suggests.

It is, however, in Camões's lyric poetry where we find the most innovative and defiant representation of India. Indian beauty appears in competition with the models of feminine beauty in vogue: the long-established Petrarchan beauty of golden-blond Laura. It is the raven hair in the poem "That Captive" that receives praise, that captivates, and it is the enticing dark beauty of Barbara that makes all forget the blond beauty. Thus, Camões openly challenges and

subverts the parameters of feminine beauty in vogue for centuries.

DUELLING VISIONS

It is clear that Portuguese writers' visions of India differed from imperial discourse. The land of easy delights that beckoned the most inept of suitors, such as Constança's husband, was the source of Portuguese moral ruin and depravity. Imperial conquest and financial gain did not benefit the nation's moral well-being. Yet, in lyrical poetry, Camões challenged Petrarchan beauty by proposing a new model in which the colour, gender, and class of often marginalized and subaltern subjects displaced the entrenched European ideals. ♦
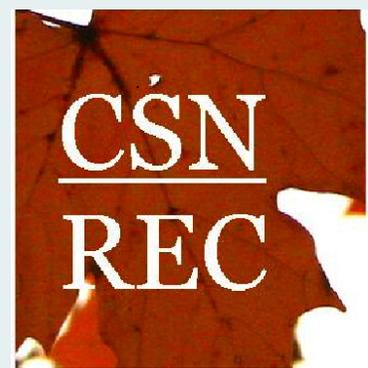
Non-traditional security threats in South Asia

TRADITIONAL AND NON-TRADITIONAL THREATS: BLURRING LINES

Non-traditional security threats are challenges to the survival and well-being of states and their peoples that arise primarily from non-military sources, such as climate change, cross-border environmental degradation and resource depletion, infectious diseases, natural disasters, irregular migration, food shortages, people smuggling, drug trafficking, and other forms of transnational crime (Chaudhuri, n.d.). Martand Jha, an Indian scholar, describes non-traditional threats as threats that emanate from non-state actors (Jha, 2017). The threats are not considered mainstream and have been regarded by security experts as peripheral in nature. For comprehensive analysis, one can identify six broad branches of non-traditional security threats: international terrorism, transnational organized crime, environmental security, illegal migration, energy security, and human security.

The important aspect of non-traditional security threats is that they impact people, the institutions of governance, and almost all organs of the state without the use of hard power. Threats can arise from non-state actors, natural disasters, and even human failure. Although non-traditional threats may classically be defined as non-military, the lines between traditional and non-traditional threats are blurring primarily because states themselves are resorting to the use of non-traditional threats to achieve politico-military objectives.

Non-traditional security threats become more pronounced where the capacities of the state are weak and the government is unable to respond to geographic, demographic, ethnic, and socio-political problems. Traditional or conventional wars can lead to catastrophic outcomes, whereas non-tradi-

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tional threats can be abated by states and state-sponsored, non-state actors can be calibrated and controlled.

SOUTH ASIA'S GEOGRAPHY AND DEMOGRAPHY ADD TO VOLATILITY

South Asia comprises 4.0 percent of the total global land mass but has 20 percent of the world's population. It has the highest population density in the world but it has limited economic and natural resources. It is a region characterized by competition for scarce resources. According to the 2013 Failed States Index, six South Asian nations—Bangladesh, Afghanistan, Maldives, Nepal, Pakistan, and Sri Lanka—are vulnerable and fall in the category of failing or failed states on various counts, including the Human Development Index (HDI) (Hossain, 2013). South Asian

nations are typically marked by large population, high poverty, low literacy, and poor indicators of human development.

CONDUCIVE CONDITIONS THAT ALLOW NON-TRADITIONAL THREATS TO FLOURISH IN SOUTH ASIA

The region sandwiched between the Golden Triangle and the Golden Crescent, with Afghanistan recognized as the largest opium producer in the world, is the nexus between non-state actors and narco-terrorism (Hodes & Sedra, 2007).

Cybercommunication and the capacity for transnational connectivity have linked transnational and transregional terror organizations and have been among the biggest contributors to the spread the jihadi ideology. Liberalism and the freedom to propagate ideology without restraint are counterproductive. Domestic fault lines and fragile institutions of governance contribute to ungoverned cyber, geographic, social, and economic domains. As a result, this space is filled by non-state actors and their proxies pursuing their self-serving agendas.

Why are people attracted to radicalization? There are no easy answers, but in many cases a flawed value system, a sense of deprivation, and an urge to impose ancestral ways of living play a role. The policy of "war and more war" through multiple platforms and domains is driving a wedge through the fractured polity and weak self-defence mechanisms among South Asian nations (Young, 2018).

A large number of non-traditional threats have the potential to cause instability in the region, which in turn may exacerbate natural and manmade crises (Memon, 2012). The following threats

Non-traditional security threats

have the potential to cause profound impacts on the overall security environment in the region:

- Radicalization can lead to a clash of civilizations and ethnic cleansing.
- Cyber assaults, disinformation campaigns, and wars of perception can weaken democratic and state institutions of governance.
- The forced displacement of populations can result in dissension and friction among refugees and local inhabitants. The civil war in Syria, for example, may produce the greatest human tragedy we have seen since the Second World War (Young, 2018).
- Global mobility and communication have greatly facilitated the transnational reach of terrorism and have helped to make it a widespread phenomenon. For example, in the post-Cold War environment, religious extremists have been able to attract recruits from different backgrounds, professions, and countries (Joshi, 2010).

MEASURES TO DEAL WITH NON-TRADITIONAL THREATS

A number of measures can be taken to deal with non-traditional threats (Joshi, 2010):

- Build domestic capacity by developing infrastructure, improving emergency health relief, and (re)establishing law and order. The institutions of governance must credible, robust, and transparent in working to resolve political, economic, and social discontent.
- Recognize that the sovereignty of the state is sacrosanct (economically, politically, and culturally).
- Engage in cooperative and collective security to harmonize efforts and resources.
- Enhance border controls and eliminate grey zones.
- Disrupt lateral communications that are used to financially support threat activities such as weapons trading and drug trafficking.
- Foreign states should not support popular revolutions against standing governments.

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How our India-Canada collaboration advanced fungal endophyte research

BY DAWN R. BAZELY

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INTRODUCTION

Google Scholar's slogan is "Stand on the shoulders of giants" (Kemmen, 2015). It reflects the notion that new knowledge, rooted in previous research, is created slowly and laboriously. Natural and physical sciences students learn about Karl Popper's scientific method, of which tedious replication is a fundamental pillar. The peer-review process of publishing results is an essential step for quality control in conservative, cautious science research.

Thomas Kuhn's 1962 book, *The Structure of Scientific Revolutions*, described paradigm shifts as a consensus-based process: after a long period of experiments and data accumulation, a theory or hypothesis is overthrown or accepted. Decades later, the limitations of Popper's scientific method and of Kuhn's analysis of knowledge creation are still being dissected, debated, and critiqued (Hyslop-Margison, 2010)—though not much by researchers in STEM (science, technology, engineering, and mathematics) fields.

How do creativity and innovation feed into this apparently highly constrained way of "doing" science? Natural and physical scientists have many avenues for bringing new ideas into their research. Here, I describe how an international collaboration with my colleague, Prof. Shibani Chaudhury, at Visva-Bharati University, India, led to both a local, methodological advance and a broader, paradigm-shifting perspective in my group's research.

FUNGAL ENDOPHYTES

The study of plant–animal interactions is one major research area in my laboratory at York University (Vicari & Bazely, 1993). Plants cannot run away from their predators, so many of them have evolved mechanisms to deter herbivory. In return, herbivores have evolved ways

> **Frugal innovation is a radically different way of thinking about how research funds shape our approach, compared with the prevailing norms in Canada.**

of getting around plant anti-herbivore defences.

Many temperate grass species contain hidden fungal endophytes that are systemic, growing throughout the host plant. These fungi synthesize toxic alkaloids and live their life cycles entirely within their host plant. The alkaloids they make have lethal and sublethal effects on both vertebrate and invertebrate herbivores grazing on the host grass.

Research progress in this field has often been limited by the available methods. In 2015, our fungal endophyte research at York University stalled. Standard bioassay tests with insect herbivores for detecting the toxic effects of these alkaloids were not sensitive enough to test the small amounts of grass plant yielded by our experiments. We needed a more sensitive method. At the 9th International Symposium on Fungal Endophytes of Grasses in Aus-

tralia, my colleague, Dr. Mark Vicari, learned about an old bioassay that had fallen out of use (Harwig & Scott, 1971). The method used brine shrimp (sea monkeys), but we were unable to obtain detailed methods from either the presenter or the existing literature.

I learned from Prof. Choudhury, a sabbatical visitor in my laboratory, that at Indian universities, unlike at Canadian universities, environmental microbiology and toxicology are still vibrant research fields, owing both to the high ambient levels of arsenic in the soils (Bhomick et al., 2018) and to ongoing, widespread industrial pollution (Khan & Tarique, 2015).

FRUGAL INNOVATION

Because our research funds for developing this new bioassay approach were limited, we adopted the "frugal innovation" approach, which originated in India. We developed a rapid bioassay for testing fungal endophyte toxicity by using a combination of inexpensive, easily available brine shrimp and commonly available laboratory equipment. Navi Radjou and Jaideep Prabhu articulated the concept of this approach in their 2014 book, *Frugal Innovation*, which advocates maximizing outcomes with the minimum amount of resources, and embracing old and new technology. We incorporated an inexpensive, recent invention, the Easy-Macro lens (www.easy-macro.com). Results from our new, rapid bioassay showed that it provides an effective method for advancing our fungal endophyte research. We are expanding our tests and plan to publish this novel application.

Frugal innovation is a radically different way of thinking about how research funds shape our approach, compared with the prevailing norms in Canada. Our methodological breakthrough

Fungal endophyte research

would not have been possible without this collective, international, interdisciplinary mindset. ❦

Our methodological breakthrough would not have been possible without this collective, international, interdisciplinary mindset.

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Canada-India Project for Research & Innovation (CIPRI)

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MISSION

- Promote awareness about the two largest democracies in the world, Canada and India.
- Promote understanding between two multicultural, multi-ethnic and multi-linguistic societies.
- Take-up non-political initiatives and become a premium Indo-Canadian resource hub in the Greater Toronto Area (GTA).
- Bring together students, researchers, academics, policy-makers, business entities, community members among others.
- Improve and expand relationship between the two countries through academic activities and help in advancement of the connectivity.
- Promote unconventional thinking by examining challenges and bring out new vision and innovative ideas.
- Provide vital information about both the Nations to the younger generation.

Nuclear terrorism in South Asia

BY ROSHAN KHANIJO

Roshan Khanijo, PhD, is a senior research fellow and research coordinator with the Centre for Strategic Studies and Simulation (CS3) at the United Service Institution of India (USI), New Delhi.

According to the 2005 United Nations International Convention for the Suppression of Acts of Nuclear Terrorism, the offence of nuclear terrorism is committed if a person "unlawfully and intentionally ... [u]ses in any way radioactive material ... [w]ith the intent to cause death or serious bodily injury; or [w]ith the intent to cause substantial damage to property or to the environment; or [w]ith the intent to compel a natural or legal person, an international organization or a State to do or refrain from doing an act" (United Nations, 2005, art. 2). The major vulnerabilities facing nuclear power states arise from a number of potential sources, including the theft of nuclear material to make an explosive nuclear device, the theft of radioactive material to make a "dirty bomb," cyberattacks launched to acquire access to and to subsequently damage nuclear plant safety, and the sabotage of nuclear facilities and transport and transit routes. Nuclear weapon states are also vulnerable to cases of theft or accidental use of low-yield nuclear weapons.

THREATS FROM TERRORIST GROUPS

Globally, nuclear power plants are operational in 30 countries, while 50 countries use nuclear energy in about 225 research reactors, and nuclear energy now provides about 11 percent of the world's electricity from approximately 450 reactors (World Nuclear Association, 2018). The number of countries involved in generating electricity through nuclear power plants has made the threat of nuclear terrorism real and global. This sobering reality looks even grimmer when we consider that there are no uniform standards of nuclear safety and security and that many nations lack transparency in their governance. The threat is more pronounced in South Asia because the Af-Pak region (Afghanistan and Pakistan) is the hub of terror activities. Many

> **The number of countries involved in generating electricity through nuclear power plants has made the threat of nuclear terrorism real and global.**

prominent groups, such as the Haqqani Network, Hezb-e-Islami Gulbuddin, al-Qa'ida, and Lashkar-e-Tayyiba, are based in the area. South Asia is also the location of two nuclear weapon states, India and Pakistan. The challenge therefore is to maintain a high standard of safety and security for nuclear power plants.

The International Atomic Energy Agency (IAEA) defines nuclear safety as the achievement of proper operating conditions, the prevention of accidents, and the mitigation of the consequences of accidents, resulting in the protection of workers, the public, and the environment from undue radiation hazards; and it defines nuclear security as the prevention and detection of, and response to, theft, sabotage, unauthorized access, illegal transfer, or other malicious acts involving nuclear material, other radioactive substances, or their associated facilities (IAEA, 2007). The challenges to a nuclear power plant arise from several sources, such as design-based threats, the "insider threat," sabotage, and drone attacks against nuclear power plants and other radioactive and nuclear research facilities. For example, not only can a swarm of drones carrying explosives damage a nuclear plant, but they can also be used to disperse radioactive materials against human populations or critical infrastructure.

DIRTY BOMBS AND CYBERTHREATS

A radioactive dispersal device (RDD), commonly known as a "dirty bomb," is a conventional bomb spiked with radioactive materials. The IAEA estimates that there are up to 1 million radiological sources around the globe (Luongo, 2010, p. 3). All of the countries in South Asia use radioactive elements widely, in settings ranging from scientific laboratories to agriculture and health care. Given their widespread use, radioactive elements need to be monitored and protected from being compromised by terrorist organizations. The damage from a dirty bomb may not be as severe as that from a high-yield nuclear device, but its detonation in a busy market hub, say, would cause mass panic and confusion and would contaminate the area, and regional economies would be impacted while decontamination is undertaken. Therefore, accounting for radiological substances both at the source and at the disposal stage is important. Strong surveillance and monitoring systems are required.

Another concern is that as nuclear power plants are modernized and digitized, they become more prone to cyberthreats. If terrorists destroy or disable a nuclear plant's backup mechanisms and cut off water and power supplies, they could create another Fukushima crisis. Even computers that operate on a closed network may be compromised by various hacking methods,

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such as privilege escalation, roaming notebooks, wireless access points, embedded exploits in software and hardware, and maintenance entry points. Maintaining high standards of safety and security is paramount.

SMALL MODULAR REACTORS AND CANADA

In Canada, nuclear power plants have been producing electricity commercially since the early 1960s. Today, five plants in three provinces house 22 nuclear power reactors, and the total share of electricity generated from nuclear reactors is about 15 percent (Canadian Nuclear Safety Commission, 2016). In June 2017, Canadian Nuclear Laboratories (CNL) put out a call for a discussion around small modular reactors (SMRs) in Canada. In the call, CNL asserted that SMRs are "a potential alternative to large-scale nuclear reactors"; would be effective at "decreasing up-front capital costs through simpler, less complex plants"; and are "inherently safe" designs (Canadian Press, 2017). Considering that small reactors were shut down in the United States when questions were raised regarding their economic viability, we need to reflect on not only the economic issues surrounding SMRs, but also whether it is possible to provide adequate safety and security for SMRs, and the equally important issue of global terrorism. A comprehensive discussion must take place before any policy decisions are made.

A GLOBAL THREAT

The threat of nuclear terrorism is global, but it is more pronounced in South Asia, where there are two nuclear weapon states. It is of the utmost importance that

> **The threat of nuclear terrorism is global, but it is more pronounced in South Asia, where there are two nuclear weapon states. It is of the utmost importance that special efforts be made to implement robust nuclear safety and security mechanisms, including constant monitoring and surveillance.**

special efforts be made to implement robust nuclear safety and security mechanisms, including constant monitoring and surveillance. Efforts should also begin to abolish tactical nuclear weapons, which threaten not only host nations but all neighbours as well. And in Canada, the advantages and disadvantages of SMRs should be debated before any commercial application is undertaken. 🍁

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India-Canada space collaboration

BY AJEY LELE

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Innternational collaboration is an important feature of the global political landscape. Political leaders, policy-makers, and economists view such collaborations, particularly in the field of science and technology, as an engine of progress and growth. International science and technology collaboration has long been known to offer various benefits to states. Examples of such collaborations are found successfully working at both multilateral and bilateral levels. These partnerships involve joint research and experimentation, project development, the sharing of technological know-how and research data, and the building of databases and sharing of equipment.

INDIA AND CANADA: THE BACKGROUND

India and Canada have a long history of scientific and technological (S&T) collaboration. The two nations have collaborated on specific areas of research and addressed issues that demand global attention, such as climate change and infectious disease control. In 2017, the India-Canada Collaborative Industrial Research & Development program was established. Collaboration between these two countries is also happening in arenas of strategic relevance, such as space and nuclear technologies. This article focuses on India-Canada S&T collaboration and argues that outer space is one area that offers major scope for bilateral collaboration.

RECENT DEVELOPMENTS

A fresh stage in technology collaboration between India and Canada began in 2017. There was a joint technology summit held in India, which was attended by the ministers in charge of science, technology, and innvoation in both countries. It was highlighted during this summit that Canada and India are partners in the 21st-century knowledge economy and that they share common beliefs in the power of science and technology.

> **Collaboration in the arena of outer space has been at the forefront of the bilateral relationship between India and Canada for some years now.**

Collaboration in the arena of outer space has been at the forefront of the bilateral relationship between India and Canada for some years now. Individually, each country has made reasonable investments in the outer space activities. India has established the capability to develop and launch satellites, while Canada has expertise, particularly in the field of earth observation (remote sensing). At the global level, Canada contributes to various activities of the International Space Station (ISS). Canada has specifically developed a robotic arm for the space station. The Shuttle Remote Manipulator System (SRMS), also known as the Canadarm, is a series of robotic arms that were used on the space shuttle orbiters to position, manoeuvre, and capture payloads. (The first robotic arm was delivered during February 1981; to date, five arms have been built and delivered to NASA for use on the space shuttle.) As part of the ISS program, Canada has also been involved in research on microgravity and related aspects of space habitation. Obviously, Canada has significant understanding about the conduct of human activities in outer space.

INDO-CANADIAN PARTNERSHIP

Since 2003, India and Canada have collaborated on various aspects of research related to the space sciences. The Indian Space Research Organisation (ISRO) signed a memorandum of understanding with the Canadian Space Agency (CSA) on March 27, 2003 pertaining to international space cooperation for peaceful purposes. Canada also uses some Indian space platforms to undertake scientific experimentation. Canada has contributed to the Indian astronomical satellite program. (ASTROSAT, India's first orbiting astronomical observatory, dedicated to the study of celestial objects, was launched in 2015.) From 2008 to the present, India has launched 12 satellites for Canada, mostly small (nano) satellites.

The ISRO has gained global credibility over the last decade. The CSA, established in 1989, is known for its professionalism. Both countries are well respected in space science, particularly in the field of remote sensing. This status provides an opportunity to undertake various joint programs where they can share expertise. Both India and Canada are developing a special disaster management mechanism based on inputs from their remote sensing networks.

FUTURE COLLABORATION POSSIBILITIES

India has already successfully undertaken missions to the moon and Mars, and plans for second missions are under way. There is an opportunity for Canada to use Indian platforms to send their scientific instruments to these places to collect useful research data. India is also looking to develop a human space program. Canada could play a role in helping to train Indian astronauts and allowing them to work on the ISS. This could give India a head start and experience in developing their human space program.

India-Canada space collaboration

At the global level, activities in space are increasing. The problem of debris is also becoming more acute. Mechanisms for debris tracking and providing advanced notice for the conduct of space launches are in development. These mechanisms provide space situational awareness (SSA). There is a strong need to develop global networks for this purpose. Such networks require a range of support systems including satellites, radars, telescopes, and other ground support equipment.

India and Canada are well placed to work together to develop such a global mechanism and to join with other countries in developing SSA technology. These partnerships could enhance our knowledge of space meteorology—knowledge that is essential to various activities in space, particularly interplanetary missions. There is also scope for both countries to coordinate at the policy level. India shares a significant cultural and social affinity with Canada, including the legacy of the large Indian diaspora in Canada. The time has come to take the India-Canada relationship to a next level. Collaboration in outer space offers multiple options in that direction. 🍁

Director's introduction

great work of our guest editors, Dr. Nivedita Das Kundu and Prof. Maria João Dodman, the contributions found here highlight key connections between the two countries as well as significant developments in India and South Asia that are important for Canadians to learn about, engage with, and integrate into their worldview and practice.

Special thanks are due to the issue's guest editors for their commitment to sustaining such fruitful collaborations, to the Robarts Centre coordinator Laura Taman, and to all the contributors to this issue of *Canada Watch*. I salute their dedication not only in maintaining research and partnerships between Canada and India, but also in sharing their work in a way that makes it accessible to a wider audience, and that serves as a great pedagogical tool to our community. 🍁

York Centre for Asian Research

https://ycar.apps01.yorku.ca/

YCAR is a community of York University researchers who are committed to analyzing the changing historical and contemporary dynamics of societies in Asia, understanding Asia's place in the world, and studying the experiences of Asian communities in Canada and around the globe. Our interdisciplinary membership includes faculty, students, and other research associates from across the social sciences, humanities, health, education, creative/performing arts, law, and business.

Indian students in Canada

Canada has become one of the most favoured destinations to pursue higher education for Indian students. The number of Indian students who are opting for higher education in Canada is on the rise. In response, Canada has recently introduced faster and easier visa-processing mechanisms for the Indian students.

The United States' stance on immigration and concerns over racist incidents play a role in bringing Indian students to Canadian campuses. Now even the study permits for Canada are processed faster than under the previous Student Direct Stream program. Three major Canadian cities—Vancouver, Toronto, and Calgary—are the preferred destinations of Indian students enrolling in university or college. The most popular fields of study for full-time international students from India are engineering and related technologies, business management and public administration, mathematics, computer and information technologies, and the physical and life sciences.

Indian students who come to study in Canada arrive with high hopes. Many choose Canada because of the quality of the education system and the opportunities that are available. However, tuition fees are often difficult to manage. Tuition fees for international students are on average more than three times those for domestic students. And once international students enrol in university or college, they face several adversities and challenges.

ADVERSITIES AND CHALLENGES

Indian students often experience difficulty in adjusting to the new culture and atmosphere. Different food habits, attitudes, lifestyles, ways of dressing, and peer relationships are problematic to understand, and it takes Indian students time to adjust. They also find it difficult to acclimatize to different value systems, signs, and symbols. Indian students often face prejudice and discrimination

BY NIVEDITA DAS KUNDU

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> Indian students who come to study in Canada arrive with high hopes. Many choose Canada because of the quality of the education system and the opportunities that are available.

in their social and academic lives from other students. They often suffer from exclusion. Even though social discrimination is not allowed in universities or colleges in Canada, Indian students often feel neglected and ignored. The harsh climate conditions are another problem that Indian students must adjust to. Winter in Canada is much longer and more severe than winter in India.

Indian students also face many problems communicating. Initially, they find it difficult to understand local accents and are often shy to talk in their own natural voice. It is also a challenge to understand what teachers are saying, which can affect students' academic performance, leaving them feeling depressed and discouraged. Although Indian students are generally well versed in the English language and have

passed the TOEFEL or IELTS (tests of English as a foreign language) before enrolling in Canadian universities or colleges, they face the problem of understanding Canadians' colloquial use of English words and phrases. Learning the pace, accent, and the tone of the language takes time.

Another major concern is that Indian students must often deal with homesickness when they come alone to study in Canada. It can be difficult to manage cooking, cleaning, and washing along with the demands of their studies. Managing finances is another serious issue for Indian students. Higher education in Canada is very expensive in itself, but there are many other costs as well, including accommodation, living expenses, books, and daily travel. Many study programs do not allow international students to work, which constrains their ability to participate fully in Canadian life and to make ends meet. As a result, Indian students often feel stressed and lonely.

Most universities and colleges in Canada offer a variety of services and resources to help international students succeed during their study period. These services include student associations, on-campus counselling centres, and recreational clubs. Canada's express entry system, in fact, creates a pathway for skilled Indians to get fast-track permanent resident (PR) status and then citizenship. For Indian students with degrees from Canadian institutions, the road to permanent residence is faster under the Canadian experience entry system. Also, Canadian higher educational institutions have realized that attracting Indian students to Canada for higher education can be a good way to generate revenue.

AFTER GRADUATION

Despite the fast track to permanent residence, many Indian students return to India after finishing their studies owing

Indian students in Canada

to the hardships of finding a suitable, well-paying job. International students often feel that they are in a disadvantageous position, compared with their Canadian counterparts, when it comes to securing a desirable job. Upon finishing their education and entering the job market, many students experience a change in perception around their job opportunities. The wish to stay in Canada after completing their education has been always a priority for Indian international students, but the final decision is dependent on their employment prospects.

Students point to a lack of connection and communication between Canadian universities and Canadian employers. They feel that Canadian employers are somewhat hesitant to hire international students; they sense that employers are often discouraged by their accents and lack of Canadian citizenship or PR status. International students also believe that employers do not understand or appreciate their international experience. The dilemma of needing Canadian experience without being able to gain it is real, and there is a disconnect between international students' expectations and the reality. It is therefore important for Indian students who want to study in Canada to do a cost-benefit analysis and reality check before coming to Canada to fulfill their dreams. 🍁

Complementarities driving relations

get fast, convenient, and affordable credit. The use of digital footprints will bring millions of consumers and small businesses (who are in the informal sector) into the formal economy, with the ability to access affordable and reliable credit.

As an insightful report from Credit Suisse so well explained, there is a $600 billion market capitalization opportunity waiting to be created in the next 10 years. This will be shared between existing public and private banks and the new banks. It may even go to non-banking platform players, which use the power of data to fine-tune credit risk and pricing, and to make money from customer ownership and risk arbitrage.

The health-care sector and the research sector in India are witnessing a surge of activity and the beginning of what is predicted to be a phase of rapid growth with the convergence of the telecom and health-care sectors. Health is becoming an extremely important paradigm for finding solutions to challenges in India, which could also benefit the entire world. India is experiencing 22-25 percent growth in medical tourism, and the industry is expected to double in size from US$3 billion to US$6 billion by the end of 2018.

The education industry in India is expected to grow to US$144 billion by 2020, from US$97.8 billion in 2016. With

> **India-Canada trade is an economic partnership of immense mutual benefit. It is a strategic partnership that can help address many shared global challenges.**

762 universities, India has the largest higher-education system in the world, and it ranks second in terms of student enrolment in higher education.

COMPLEMENTARITIES THAT WILL DRIVE THE FUTURE OF INDIA-CANADA RELATIONS

Today, India is the world's largest democracy with 814 million registered voters, compared with 28.5 million voters in Canada. India's needs and Canada's capacities complement each other. India and Canada also have strong complementarities in information technology, energy and infrastructure, manufacturing and technology, higher education, smart cities and urban planning, agriculture and agro-processing, skills development, banking, entrepreneurship (start-ups), and research.

There is a huge demand for hydrocarbons and steel-grade coal in India, and Canada has an abundance of both. India is a big consumer of pulses such as lentils and beans, and Canadian production has been increasing to meet part of India's needs. Canadian pulp and newsprint as well as potash find their way to India. Canada is a big market for the kinds of goods that India manufactures for export—from apparel and fabric to carpets, leather articles, gems and jewellery, and pharmaceuticals. While there are well-regarded Indian companies in Canada and well-regarded Canadian companies in India, along with some cooperation in high technology—from nuclear energy to avionics and solar cells—these are still only the beginning. India offers a host of opportunities for Canada's mature pension fund and investment companies.

India-Canada trade is an economic partnership of immense mutual benefit. It is a strategic partnership that can help address many shared global challenges. And it is a relationship nurtured by the emotional bonds of a vibrant Indian community in Canada of 1.3 million people. 🍁

- University of Saskatchewan, with agricultural research, particularly around pulses and potash, two main drivers of Canada's trade with India.
- University of Winnipeg, with development projects in Punjab, under its former president.
- Colleges, particularly in Ontario, with interests primarily in recruitment. When the Student Partnership Program (SPP) began, there was a sharp rise in Indian students attending Canadian colleges.

The main difference between past and present is that relationships are now generally intended to be long term and, where possible across all disciplines, regulated by formalized agreements, promising both institutional and individual activity, and with both partners contributing and valuing the relationship equally. Although these relationships may be better funded than before, Canada still lags behind other countries in the amount of funding and volume of participation, in terms of both numbers of people and numbers of institutions. Quebec is generally absent, for a number of reasons. The historical connection between India and Quebec is different, and there are language issues as French is rarely studied in India, and few students or professors are willing to study and/or work in French during a research exchange. The exception is in STEM fields, particularly engineering, with relationships at the École de technologie supérieure (part of the Université du Québec) and the University of Sherbrooke operating in English. Puzzling is the almost complete absence of Atlantic Canada from Indian relationships, despite its overall strength in international recruitment and its need to attract immigrants.

WHERE ARE WE NOW?

India is now a destination of choice for Canadian international academic collaborations. It is a rite of passage for presidents and senior administrators to visit India; now they can typically visit existing partnerships. But in the last few years, many observers of Canada-India relationships have sensed that these relationships are no longer growing in quantity or in breadth and that they are perhaps stagnating. There is little new activity, just plenty of recruiting for fees-paying international undergraduate students. The Canadian government lags far behind (compared to the United Kingdom, the United States, Australia, Germany, and the European Union, even small countries like Finland) in government support for academic or research relationships. Neither governments nor institutions are giving any support. There is a frequent lack of follow-through, with attendant reputational damage with Indian government officials, senior academic administrators in India, and prospective students (through their extended families and former classmates). Most recently there is lower-than-expected uptake on postgraduate work permits, which enable (most) Indian graduates of Canadian degree programs to apply for work permits in Canada; those who do apply have often not been able to find work and have returned to India. This has been reported in the press, and I have also observed it directly in the experience of sons of close friends in India, who graduated recently from two different Ontario institutions, one in business and one in engineering. Another disappointment has been the belated discovery by some Indian students (for example, when applying to graduate school, in Canada or elsewhere) that Canadian colleges are not universities. This was not something that was clear to them on application, only on graduation.

Some agreements now go beyond single institutions. Ontario Universities International (OUI) manages OIN (Ontario-India, formerly Ontario-Maharashtra-Goa, now including universities in Delhi), announced in 2007 by former Premier Dalton McGuinty in Mumbai. There is Mitacs' Globalink: the pilot program half a dozen years ago was for 20 students, only from Indian Institutes of Technology (IITs) and only to three BC universities (the University of British Columbia, Simon Fraser University, and the University of Victoria). The program was then expanded to many more students, from a wider variety of high-ranking Indian institutions, and a broad selection of Canadian universities. Globalink now operates in a dozen countries, with students travelling in both directions. Government sponsorship or funding is in many cases broader. In terms of federal support, there is Global Affairs Canada's (GAC's) Science and Technology Agreement (begun when the ministry was known as Department of Foreign Affairs and International Trade [DFAIT]). Provincial funding is much less coordinated in Canada than in competitor countries as a result of perennial constitutional issues of federal (research, foreign policy, international trade) versus provincial (education) jurisdiction. These disjunctions are noticed and commented on by India (and other competitor countries), not necessarily because it weakens Canada's competitive position but mostly because it complicates logistics for a foreign entity dealing with Canada. The diversity of funding sources and the need to satisfy provincial or federal governmental agendas have led to broader mandates around research, commercialization, innovation, training, and trade, along with traditional forms of academic collaboration.

THE FUTURE

What do we need in order to achieve better and more extensive academic relationships between Canada and India?

- Better funding for exchanges, partnerships, and travel. Face-to-face contact is required, at least initially and probably at various stages in the development of a solid relationship. Technology can supplement, not substitute for, direct contact. Direct contact is the best way for students to get experience (experiential learning, placements, etc.) and for

faculty to discover research synergy.

- More big projects to ignite the imagination, like CIRCE (which as a centre has faded from view, though some of its projects are strong). Projects and problems like "water," which bring people together across universities, disciplines, and countries, are tremendous connectors. But big projects alone will not suffice. We also need smaller projects and money to fund individuals including students. Canada should step back into funding more of these—for example, through the Shastri Indo-Canadian Institute. Such projects are currently funded by the Government of India and Shastri's institutional member fees only.

- Minimal visa restrictions—either no restrictions at all, or longer visas (10 years or more). Currently, people are deterred by the complexity and time involved in getting visas, especially research visas, so they often get a one-time visa for one specific conference or academic visit. To build connections, we need easier travel, sometimes on short notice. Sometimes visas to Canada are the hardest to get for young, highly educated professionals, as there is allegedly the greatest fear that this type of person will seek to remain in Canada rather than return to India. It is not my intent to criticize immigration policy, but simply to point out the tension between current visa policy and the free-flowing mobility of

young, well-educated persons, who can be the lifeblood of academic research and educational relationships.

- More flights to keep costs low and ensure greater availability of seats. Although there have been recent improvements (such as Air Canada's increased service non-stop to both Delhi and Mumbai from Toronto and from Delhi to Vancouver), more would be beneficial, especially from other major cities in both countries. Additional carriers would keep costs low.

- More shift away from Canadian negative attitudes to India. Outside the Indian diaspora, there is still very little knowledge of contemporary realities in India in the Canadian population. One example is the continuing problem of the Indian three-year bachelor's degree from reputable institutions not being accepted as a full qualification to enter master's programs in Canada, despite major efforts and a policy paper led by York a decade ago, showing that the core disciplinary knowledge in such three-year degrees is greater than in four-year degrees from Canada and the United States. If it isn't a problem for UK graduates, why is it a problem for Indian graduates? There is also much bad press still around sexual harassment and assault in India, which deters many female students and researchers from going to India.

- More live exchanges, with activity measured by people travelling in each direction, not by exchanges on paper with no activity. Maintaining exchanges takes energy and ingenuity, as well as institutional commitment, especially as deans, VPs, and presidents come and go, and memory and commitments are lost. The current number of agreements between Canada and India, often cited to be around 400, is unsustainable, and most are not living agreements, just paper agreements. We need more focus. Each institution is different, so there is no "one size fits all." Each must find its own agreements, a unique set of relationships and arrangements that work for it, and that could evolve over time.

- A reinjection of some energy and commitment. We need to keep some focus on India even as we all chase new markets around the world, and India is no longer the hottest newest thing. 🍁

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