

An Untapped Resource?

Illusion and Reality: Challenging the Received Wisdom on Diaspora Scientists and Science Diplomacy

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Greetings to all and many thanks to the organizers of this week's workshop.

I would like to launch this discussion of the role and place of diaspora and refugee science communities (DSCs) in diplomacy and international relations by offering an overview of some key considerations and constraints.

The idea of tapping into the skills and expertise resident in diaspora and refugee science communities (DSCs) in order to assist those displaced and advance international policy goals and more effectively address global challenges is certainly an attractive [proposition](#). That said, much complexity, uncertainty and ambiguity lie just below the surface. The relevant literature is thin, initiatives have been few, and as a result, with a few [notable exceptions](#), there is little by way of an established track record which might be examined to illuminate the way forward. Hence the importance of this [event](#).

It will be argued below that even if it can be demonstrated that scientists who share a common nationality but are living abroad do in fact exhibit characteristics of something which could reasonably be described as a *community*, it is by no means clear that would-be members of DSCs self-identify as such or could be motivated to contribute to the attainment of objectives lying largely outside of the laboratory.

Would, for example, displaced Syrian or Iraqi, Afghan or Nigerian - or, for that matter, Chinese or Indian-born scientists living overseas - be willing to participate as a group in any kind of a larger, and in some respects more inherently political enterprise?

In short, it seems to me that tapping into DSC's for the purposes of advancing international development goals, or engaging in [science diplomacy](#) generally is quite possibly more easily said than done.

In trying to frame and contextualize the issue, there is much to contemplate.

Minds on the move

With the advent of the globalization age, and the spike in migration and as a result of the profusion of S&T-driven [wicked](#) issues, poverty, conflict and failing or failed states, the phenomenon which was until recently referred to as the *brain drain/brain gain* has morphed into something perhaps better described as [brain circulation](#). This may be attributed in large part to

the existence of global value chains, unprecedented levels of international trade, travel and migration, the rising incidence of work and study abroad, and the intensification of connectivity in general. Today, the physical location of the workplace is often of minimal consequence, and it represents less of a barrier to possible partnerships than has ever been the case previously. To be sure, security concerns related to the risk of terrorism and spread of religious extremism - think the Trump's travel and immigration restrictions, which represent a significant barrier to all sorts of international scientific collaboration - have intervened as a new obstacle to free movement. But that said, the daunting ideological differences which featured as such prominent impediments during the Cold War have in large part melted away. On balance, labour mobility and personnel exchange - not to mention refugee flows - have increased dramatically. This has contributed to the growth of diaspora and refugee communities of varying types all around the globe. Scientists and researchers represent a small, but critically important sub-set of that group.

In the case of scientists, and conditioned in part by the particular area of specialization, most international relocation undertaken for research and training purposes has traditionally been from developing to developed countries. The despatch of remittances notwithstanding, this has tended to be seen mainly in terms of creating winners and losers. While that pattern - and those perceptions - are still in evidence, today the situation is far less cut and dry. The prospect of collaborating with colleagues in China, India, Brazil, Turkey or South Africa is for some scientists as appealing an option as that of working with peers in more traditional centres of excellence. The calculus of global scientific cooperation, in other words, is evolving. This trend is accelerating, and with the growing incidence not only of refugee scientists, but of international scientific and R&D activity more generally, brain circulation is increasing and adding to the size and number of (notional) diaspora science communities. This is happening not only in Europe, the USA, Japan and South Korea, but world-wide.

Cross-cutting implications for international science policy

Through their contribution to evidence-based knowledge creation and knowledge-based problem solving, DSCs are *potentially* an important science diplomacy resource for both sending and receiving states. From a science policy perspective, the possible international implications associated with scientific diasporas are particularly multi-dimensional. Globalization has translated into the presence of a growing cadre of foreign born scientists working, studying or displaced overseas. Receiving states undoubtedly benefit, even if foreign credentials are not always immediately recognized. But the skills and abilities embedded in that group may also be relevant to addressing some of the challenges facing their home countries. The presence of a rising number of non-native born scientists and researchers will bring much to their foreign employers, but it may also be pertinent to the pursuit of key foreign policy objectives in the countries of their birth. In short, foreign-born scientists can theoretically contribute to the achievement of diplomatic and international policy goals in both home and host countries.

It may be that DSCs represent an important element in the emerging architecture of science diplomacy and transnational innovation. Yet the question remains: how can this potential be captured, with DSCs operationalized as tools of international policy? *If* DSCs exist as something resembling coherent, self-identifying "communities", then how might these communities of expatriate expertise be tapped to help address development and security challenges in their

countries of origin and to hasten the advance of peaceful, prosperous international relations across the board?

Can the collective knowledge, cultural understanding, and linguistic capacities of DSCs (or [networks](#)) be harnessed and mobilized to produce win/win outcomes for the mutual benefit of both home and host governments? Perhaps, but not easily.

Alternatively, it may be DSCs have been unduly laden with fanciful imaginings by underemployed policy wonks. What, for instance, if the majority of foreign born scientists with only their shared nationality in common would actually prefer to leave the past behind and concentrate instead upon getting on with their work and building a new life?

Much remains unknown - almost no literature on the subject - and there are no foregone conclusions.

Examples of DSC networks: Rather thin

United States/Canada

- Network of Diasporas in Engineering and Science ([NODES](#)) – joint venture involving the State Department, the American Association for the Advancement of Science, the National Academy of Sciences and the National Academy of Engineering
- International Diaspora Engagement Alliance ([IDEA](#)) – public-private partnership sponsored by the State department, AID, and the Calvert Foundation.
- Efforts by Canadian universities think tanks and research institutes (scholarships, financial incentives, visa support) to recruit highly skilled personnel affected by US travel ban

Europe

- European Scientific Diasporas in North America ([EURAXESS](#)) - provides information on research positions, fellowships and funding sources in member states
- Spain's - [disputed](#) - efforts to through their embassies and consulates to [connect](#) with Spanish expatriate scientists working in the USA and EU
- Outreach activities of UK's Science and Innovation [Network](#) (FCO/Industry Department joint venture

Asia

- Global Indian Network of Knowledge ([Global INK](#)) , an electronic platform for knowledge exchange between the diaspora and India

There are undoubtedly other examples, but they are not well documented. To better understand how DSCs might be configured to serve the purposes of international policy, it will be necessary to drill deeper.

Preliminary observations

- National governments and international organizations, and to a lesser extent civil society, business and universities are best positioned to facilitate action and collaboration, but they face a knowledge and information gap
- For those affected, there is often real difficulty determining the most appropriate contacts and sources of potential funding and support - no purpose built programs or institutions
- Clear need to identify the membership, institutional affiliations and specialties of existing diaspora/refugee science communities
- Few existing platforms where diaspora scientists can come together; no DSC master database
- Linking with and leveraging the scientific diaspora could advance development objectives, but there is a disconnect between goals and implementation
- Skill and knowledge deficits within foreign ministries and international organizations; capacity to engage in science diplomacy and the management of international S&T issues is limited; scientists and diplomats inhabit separate, floating worlds (more on that later)
- Need for a compelling strong value proposition which would underpin efforts to forge diaspora networks - yet to be effectively articulated
- Urgent need to conduct further research on the status of DSCs, create new and publicize existing programs that support DSCs, and to develop potential policy options

These, then, are some specific challenges associated with efforts designed to address issues related directly to DSCs. Among the total of some 59.5 million people forcibly displaced, including 19.5 million registered refugees, 1.8 million asylum seekers and 38.2 million internally displaced and now in limbo globally, including thousands of highly skilled scientists and researchers, more can, and certainly should be done. Although not typically seen as such, the problem of how best to harness the untapped potential resource of diaspora and refugee scientists as a tool for advancing the goals of international policy and relations falls squarely within the province of science diplomacy.. What, then, of the broader prospects for, and impediments to improving performance in this emerging area of scholarship and diplomatic practice?

On that question, suffice it to say that the plot thickens substantially...

It won't come easy: Seven obstacles to a science diplomacy renaissance

There is a question which should be on everyone's mind, but isn't.

Is the world careening towards some unknowable - but not too far distant - tipping point beyond which remedial solutions and recovery will be impossible?

Perhaps.

Consider, for instance, these vexing challenges:

Climate change.

Diminishing biodiversity.

Public health and pandemics.

Species extinction and habitat destruction.

Management of the global commons.

Emergency preparedness and disaster response.

This is a small, but representative sampling drawn from the ever-expanding list of global issues which share as a defining characteristic the centrality of a major S&T dimension. The urgent need for effective action is clear, and [science diplomacy](#) (SD) is the international policy instrument best suited to treating these *wicked*¹ problems. Unfortunately, the demand for science diplomacy far outstrips the available supply.

How can this capacity gap be explained? What lies behind the SD shortage?

I propose to address those questions by summarizing the concept of science diplomacy and presenting the arguments in favor of governments and international organizations undertaking more and better SD practice. The balance of the analysis will focus on identifying and elaborating the constraints which are inhibiting progress. That troubling combination of factors - the “*Malignificent Seven*”? - must be better understood and effectively broached if performance is to improve.

[Science diplomacy](#) (SD), a specialized sub-set of public diplomacy, is a transformative tool of soft power which combines the political agency of diplomacy with the evidence-based, technologically-enabled problem-solving methodology of science. Unique among non-violent international policy options, SD can play a key role in advancing the cause of peace and prosperity, security and development in an increasingly [unstable](#) world. In face of the negative attributes of [globalization](#), [SD](#) offers the prospect of engaging shared interests to overcome political constraints and enlarge international cooperation. The universal, non-ideological language of science is especially valuable when regular channels of political and diplomatic communication are strained or unavailable, for instance during periods of protracted international [tension](#). In the rising [heteropolis](#) - a work in progress in which the vectors of power and influence are characterized more by difference than by similarity - SD is under-utilized and under-valued, but nonetheless [essential](#).

¹ I define a *wicked* issue as one which CUTS all ways: Complex; Unresolved; Transnational; Science-based

Notwithstanding conventional convictions and the present spike in the incidence of armed conflict, there are no military solutions to the world's most pressing problems - a [new threat set](#) comprised of S&T-driven transnational issues. No amount of spending on defence will resolve the challenges of food and water insecurity, environmental collapse, drought, desertification or soil degradation, habitat destruction or environmental collapse. Indeed, it will almost certainly [intensify them](#). Security is much more than a martial art; it is rooted in broadly-based, long term, human-centred and sustainable development. The search for innovative approaches to treating the security/development nexus should become the priority of both diplomacy and international policy, and SD offers a promising way in.

But, here's the rub. If SD is what the world needs now, and is indispensable in addressing global issues which are immune to the application of armed force, why are most international institutions so ill-equipped to deliver? Why is SD so marginalized and obscure?

The answer would appear to reside somewhere within a sprawling group of inter-related obstacles, constraints, and impediments which together stand in the way of a SD renaissance. These include:

1. *A transformed operating environment.* Since the [heyday](#) of SD during the Cold War - when American and Soviet scientists kept talking even during times of great geopolitical stress - everything has changed. Power is shifting from the North Atlantic to the Asia Pacific and the era of state-centricity has ended with the emergence of a multiplicity of new actors in an increasingly *heteropolar* world. Although intensified globalization has dramatically increased connectivity and convergence, paradoxically it has also accelerated fragmentation and heightened the sensation of difference. Navigation is hazardous and difficult in this new *whirled* order. It is as if all of our old verities and assumptions have been placed in a blender which is set on high and running non-stop.
2. *Image problems.* Science and diplomacy each struggle with mixed popular perceptions. In the public imagination, science is widely seen as dense and impenetrable, something that most people could not wait to drop in high school. This orientation has been exacerbated in recent years by the growing skepticism regarding the social value of science, evidence, knowledge and [statistics](#), and the inclination to rely on beliefs, convictions, emotion and falsehoods rather than empirical evidence as the basis for policy formulation and political decision-making. Brexit, the Trump ascendancy, climate change denial, anti-vaccine movement, the explosive growth of "fake news", and the invention of "alternative facts" all support this observation. For its part, diplomacy is often associated with weakness, waste, and [appeasement](#), with caving in to power, and with dithering dandies hopelessly lost in a haze of irrelevance somewhere between protocol and alcohol. Think Chamberlain in Munich. This "double whammy" has impeded the promotion of SD and underscored the desperate need for a new narrative.
3. *Institutional crises.* A raft of substantial problems have exacerbated the branding debacle sketched above. International organizations, and all three elements of the [diplomatic ecosystem](#) (foreign ministry, foreign service, and diplomatic business model) have failed to keep pace with the demands of globalization. Radical reform is required. For their part, scientists are generally loathe to leave the lab and enter the political/policy realm, and

they tend to communicate amongst themselves in an esoteric language which outsiders cannot easily apprehend. This combination has proven debilitating.

4. *Solitary confinement.* Science and diplomacy effectively constitute two solitudes, floating worlds which rarely intersect. The principal elements of the underlying cultural, communications and values divide are summarized below.

Diplomacy	Science
Stability/balancing power	Change/unleashing power
Convention(s)/conventional	Experimentation/discovery
Risk aversion	Risk tolerance
Practice/practical	Theory/theoretical
Argument (tact, discretion, persuasion, influence)	Facts and data
Negotiation and compromise	Trial and error
Political/policy development	Empirical/postulation of principles
Polis	Lab

Little wonder that scientists and diplomats feel alienated from each other. Scientists excel at defining problems and performing objective assessment, but are less adept at proposing workable solutions. Diplomats are able to craft compromises and resolve differences, but are subjectively inclined, unschooled in science and often have trouble understanding scientific terms, methods and rationale.

5. *Cold War carry-overs.* Outdated convictions - that security is best achieved through defence rather than by addressing human needs; that the state, not the human person is the primary referent; that armed force is the ultimate arbiter in international relations - continue to command the attention of many Western leaders. This psychological baggage consists of: a binary world view ([then](#) Communist World vs. Free World; [now](#) “with us or with the terrorists”); characterization of threat as universal and undifferentiated (then “The Red Menace”; now Islamists, insurgents and rogue/failed states); and the militarization of the international policy response (then containment, deterrence, Mutually Assured Destruction; now, the [Global War](#) on Terror). The prevalence of old-think is not without its purposes, but precludes meaningful reform.
6. *Special interest dominance.* Deeply entrenched [defence-related networks](#) occupy a dominant place - and commanding political space - in major capitals. These influential interests are served by persistence of Global War on Terror, under whatever guise, and the related perpetuation of [politics of fear](#). When thinking about the foremost risks facing the planet, the received wisdom suggests that people everywhere should all be afraid, very afraid, of religious extremism, political violence and terrorism. While it would be a mistake to understate these threats, the [probability](#) for most people of being directly affected by such events is considerably lower than the likelihood of being hit by lightning or drowning in the bathtub. [Certain quarters](#) benefit from permanent public

anxiety and the militarization of international policy, but the tax-paying public are not among them.

7. *Misallocation of international policy resources.* The priority status accorded defence [spending](#) has crowded out much less costly, but more cost-effective investments in diplomacy and development. Consider Trump's intention to increase the already bloated US defence budget - larger than the next seven countries *combined* - by \$56B at the expense of spending on diplomacy, multilateralism, aid and the environment. Chronic [under-funding](#) has weakened institutional and human resource capacity and undercut the delivery of SD both multilaterally and in foreign ministries. In particular, the severe skills, knowledge and management deficits have proven debilitating. Canada, it must be added, faces a singularly enormous challenge in rebuilding its science infrastructure after the "[decade of darkness](#)" imposed by the previous Harper government.

Make no mistake. Data is of little use in the absence of interpretation, and there exists a desperate need for interpreters, guides, brokers and translators who can bridge the two solitudes. Overcoming these challenges will not be easy, not least with the ascension of a regressive Trump administration in the USA. Yet, absent radically improved performance, there is a growing likelihood that humanity will arrive, at some indeterminate, but not too distant point in the future, at a global tipping point beyond which recovery may be impossible.

Finding ways to manage the "*Malignificent Seven*" - a sleeper issue of enormous consequence - should be one of the central political and public policy objectives of our times. But instead, the lion's share of resources still flow to the military; the US Government, for example, [spends](#) more on defence R&D than all other types of research combined. In the mainstream consideration of SD is next to invisible, displaced by infotainment spectacles and more proximate concerns such as employment, housing, education and health care.

Still, before readers get too depressed... the situation is not entirely bleak. Science diplomacy has produced a rich legacy of arms control and environmental agreements, including recent pacts to establish an Antarctic marine [reserve](#) and to control [HFCs](#), and significant disarmament initiatives affecting [Iran](#) (nuclear non-proliferation) and [Syria](#) (chemical weapons).

The general intensity of SD-related activity has increased significantly in recent months, with meetings in [London](#), [Brussels](#), [Vienna](#), [Berlin](#) and [Ottawa](#). All seventeen of the UN's [Sustainable Development Goals](#) contain major S&T components. Courses are cropping up at US institutions, including [Tufts](#), [The Rockefeller University](#) and [NYU](#).

Some specialized agencies ([UN](#), [EU](#)) and governments ([US](#), [UK](#), [Switzerland](#), [Spain](#), [Japan](#), [Korea](#), and [NZ](#)) have demonstrated a number of best practices in SD. New Zealand's Chief Science Advisor, Peter Gluckman, has worked tirelessly to establish an International Network of Government Science Advice ([INGSA](#)), while NGOs such as TWAS have significantly deepened their engagement. Vaughan Turekian, the Science and Technology Advisor at the US State Department and former head of the AAAS' Science and Diplomacy program, has launched a raft of innovative [initiatives](#). The SESAME Synchrotron [project](#) in Jordan is co-managed by a group of countries not known for their habits of cooperation - Palestine, Israel, Turkey and Cyprus, among others.

And here we are today considering an issue on the leading edge of SD - the case of DSPs.

That said, these examples represent the [exceptions](#) rather than the rule; even taken together they are not nearly enough to change the big picture. Indeed, there have lately been some especially unwelcome setbacks (e.g. [Russia](#)) and much remains to be done.

It is equally important to underline that much of the science diplomacy conducted since the end of the Cold War has been related to weapons programs, or their location and [dismantling](#). The internationally-certified cessation of certain weapons of mass destruction (WMD) programs in Russia, Libya, South Africa, Argentina, Ukraine, and Kazakhstan was both necessary and desirable, and represent SD milestones. Yet progress on other global issues - again, think the new, S&T-driven threat set - has been desultory.

And the implications for Canadian foreign policy? They are manifold. With the UK and EU preoccupied internally, and a clutch of barbarians inside the gate at 1600 Pennsylvania Avenue, USA, the political space has been created for the exercise of leadership - something at which Canada [once excelled](#)². We are the world's reservoir, have significant scientific capacity in the field ([Northern Lakes](#) project, expertise in [universities](#), think tanks, research institutes and NGOs such as the [IISS](#)). Why not initiate the negotiation of an international convention on the management and preservation of freshwater resources? In the wake of prolonged period of [severe](#) diplomatic deficits, this would tie in directly to the looming issue of [water security](#), would help to reconnect Canada to its storied liberal internationalist and environmentally progressive [past](#), meaningfully support the [UN SDGs](#), and likely win us some Security Council votes among both like-minded countries and those afflicted by drought, desertification and soil degradation in the Sahel and Central Asia.

Or why not chose one or two other issues from remainder of the sprawling compendium of wicked issues in order to make our mark and demonstrate - through diplomacy of the deed - that beyond the profusion of "alternative facts", fake news, and deliberate distortion there is a way forward and that Canada cares?

Opportunity can thrive in adversity, but that won't happen in a policy vacuum. With [GAC](#) chronically under-resourced and still struggling on life support after a decade [of mismanagement and neglect](#), and other international policy institutions falling far [short](#) of any reasonable expectations, reinvestment is required.

To conclude. The continuing [militarization](#) of international policy, as illustrated by the failed interventions in Afghanistan, Iraq, and Libya, has proven [ruinous](#). You can't bomb Ebola, garrison against the Zika virus, or dispatch an expeditionary force to occupy the alternatives to a carbon economy. It is long past time that science diplomacy, and attention to international S&T issues more generally, be moved out of the shadows and into the light. SD should become the preoccupation of both foreign ministries and international organizations, with priorities and resources [reallocated](#) accordingly.

² Michael Small's referenced article on the Human security Agenda of the late 1990s is particularly instructive on this point.

This will mean radical institutional and human resource policy reforms, a host of new approaches to training, recruitment and promotion, and a revolution in bureaucratic culture. Concern over the scientific unknown on the part of diplomats, and discomfort with politics and diplomacy on the part of scientists must be overcome and give way to a pattern of closer association, cross-fertilization and the habit of regular exchange and interaction. As is happening elsewhere in the worlds of commerce and public administration, the lateral and the supple must replace rigid hierarchy and authoritarian interpersonal relations if [wicked](#) issues are to be successfully resolved.

One can easily understand why scientists and diplomats make strange bedfellows, and why they appear to have trouble communicating on the rare occasions when they do meet. But there are shared objectives that the two worlds might build on. Both science and diplomacy seek to use reason to bring order and understanding to their otherwise roiling and disorderly realms. Perhaps that is a basis for better collaboration in the future.

Final thought. Science a complex matter, a two edged sword offering the keys to security and development on one hand, but capable as well of generating insecurity and underdevelopment, of courting war and devastation, on the other. This paradox is particularly clear as we enter a dark period of protracted instability; Brexit, Trump, Russian revanchism, the ramping-up of wars in the Greater Middle East, and the rise of the populist, authoritarian right have cast doubt on rationality, empiricism and evidence-based behavior.

Displaced and refugee scientists and researchers have been among those most [affected](#).

Still, in a contested and competitive world of rising inequality and polarization, of radical politics and religious extremism, of Wall St. impunity, voodoo economics and bundled derivatives, the *idea* of scientific enterprise - founded on the conviction that all problems can eventually be solved, that misery is not fated - shines brightly. That light on the horizon, in conjunction with the remedial promise of knowledge-based, technologically-enabled science diplomacy, may be just the tonic required in these otherwise trying times.

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