IT WON’T COME EASY: SEVEN OBSTACLES TO A SCIENCE DIPLOMACY RENAISSANCE

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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; and
- 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 science and technology (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 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 favour 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, a specialized subset 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 the face of globalization’s negative attributes, SD offers the prospect of engaging shared interests to overcome political constraints and enlarge international co-operation. 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.

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
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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, the 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 Neville 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 has 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 loath to leave the lab and enter the political/policy realm, and they tend to communicate among 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:

<table>
<thead>
<tr>
<th>Diplomacy</th>
<th>Science</th>
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<tr>
<td>Stability/balancing power</td>
<td>Change/unleashing power</td>
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<td>Convention(s)/conventional</td>
<td>Experimentation/discovery</td>
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<td>Risk aversion</td>
<td>Risk tolerance</td>
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<td>Practice/practical</td>
<td>Theory/theoretical</td>
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<td>Argument (tact, discretion, persuasion, influence)</td>
<td>Facts and data</td>
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<td>Negotiation and compromise</td>
<td>Trial and error</td>
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<tr>
<td>Political/policy development</td>
<td>Empirical/postulation of principles</td>
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<td>Polis</td>
<td>Lab</td>
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Little wonder that scientists and diplomats feel alienated from each other. Scientists excel at defining problems and performing objective assessments, 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 the persistence of the global war on terror, under whatever guise, and the related perpetuation of the 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
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directly affected by such events is considerably lower than the likelihood of being hit by lightning or drowning in the bathtub.\textsuperscript{21} Certain quarters benefit from permanent public anxiety and the militarization of international policy, but the tax-paying public is not among them.\textsuperscript{22}

7. **Misallocation of international policy resources.** The priority status accorded defence spending\textsuperscript{23} has crowded out much less costly, but more cost-effective investments in diplomacy and development. Consider U.S. President Donald Trump’s intention to increase the already bloated U.S. defence budget — larger than the next seven countries combined — by $56 billion at the expense of spending on diplomacy, multilateralism, aid and the environment. Chronic under-funding\textsuperscript{24} 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.\textsuperscript{25}

Make no mistake. Data are 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 U.S. 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 flows to the military; the U.S. government, for example, spends more on defence research and development than all other types of research combined.\textsuperscript{26} 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 hydrofluorocarbons (HFCs),\textsuperscript{27} and significant disarmament initiatives affecting Iran (nuclear non-proliferation)\textsuperscript{28} and Syria (chemical weapons)\textsuperscript{29}.

The general intensity of SD-related activity has increased significantly in recent months, with meetings in London,\textsuperscript{30} Brussels,\textsuperscript{31} Vienna,\textsuperscript{32} Berlin\textsuperscript{33} and Ottawa.\textsuperscript{34} All 17 of the United Nations’ Sustainable Development Goals contain major S&T components.\textsuperscript{35} Courses are cropping up at U.S. institutions, including Tufts,\textsuperscript{36} The Rockefeller University\textsuperscript{37} and NYU.\textsuperscript{38}
Some specialized agencies (UN, European Union and governments (U.S., U.K., Switzerland, Spain, Japan, Korea and New Zealand) have demonstrated a number of best practices in SD. New Zealand’s chief science advisor, Peter Gluckman, has worked tirelessly to establish the International Network of Government Science Advice (INGSA), while NGOs such as the The World Academy of Sciences (TWAS) have significantly deepened their engagement. Vaughan Turekian, the science and technology advisor at the U.S. State Department and former head of the American Association for the Advancement of Science’s (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 co-operation — Palestine, Israel, Turkey and Cyprus, among others.

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 U.K. and E.U. preoccupied internally, and a clutch of barbarians inside the gate at 1600 Pennsylvania Avenue, the political space has been created for the exercise of leadership — something at which Canada once excelled. We are the world’s reservoir, with significant scientific capacity in the field (northern lakes project, expertise in universities, think tanks, research institutes and NGOs such as the IISD). Why not initiate the negotiation of an international convention on the management and preservation of freshwater resources? In the wake of a 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 choose one or two other issues from the 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 Global Affairs Canada (GAC) chronically under-resourced and still struggling on life support after a
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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 the failed interventions in Afghanistan, Iraq and Libya illustrate, 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.

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 is 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 behaviour.

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