

## KEYNOTE ADDRESS

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**SCIENCE IN DIPLOMACY: CAN EVIDENCE TRUMP INTERESTS?**

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Thanks for inviting me and assigning to me this rather challenging topic. After my first moments of anxiety, I began to welcome exploring it, as it caused me to reflect on my own experiences as a scientist and an international diplomat-or at least one who consorted regularly with diplomats. Perhaps I may be able to draw some conclusions that benefit further development of the field of health diplomacy and help to prepare practitioners or aspiring practitioners in global health for their work.

A large part of my early professional career was spent as a basic and clinical scientist. My early work was in a metabolic laboratory studying the physiology of childhood malnutrition, how malnutrition made some children swell and why there was an increase in a major stress hormone in malnourished children. I carried out research on animals, mainly rats-man's best friend and investigated the metabolic pathways involved in the kidney's production of glucose at the same time it produced ammonia in response to changes in body acidity. I lived in the world of pipettes and balances and electronic gear and was fascinated by the beauty of the organization of cellular metabolism. The mammalian cell was just the most marvelous piece of engineering that I had encountered. I was intrigued by the nature of science-and I am referring mainly to the STEM world-the world of science, technology, engineering and mathematics.

And then I would leave that world and enter an intergovernmental organization in which basic decisions have political overtones, and the voices of the diplomats are rarely absent. I began to learn about the canons of diplomacy and the rules of diplomatic interaction. Of course my early exposure was to health diplomacy-how matters of health that affected many states were dealt with through diplomatic negotiations. Global health-world health-the health of all people and the reduction of health inequity cannot be addressed without international health action, through activities that require combined action of more than one state. This relationship between states and the protection of the

interests of each state individually has been at the core of traditional diplomacy in any field from time immemorial and globalization has rendered this function more rather than less important. I like to refer to diplomacy as the art and practice of negotiation and conflict resolution that is practised in almost every sphere of human activity and it is no longer the exclusive province of specialists in international relations and

foreign policy although the latter is the aspect that catches the public imagination. The speed of decision making is different, the opportunity for deliberation and the inputs from many sources sometimes compromised, but the essence of

the function of transmitting to another state the information needed to set out the position of one's state has not changed fundamentally. Global health is impossible without health diplomacy.

It is in the workings of the international or rather intergovernmental technical organizations that any conjuncture or disjuncture between science and diplomacy can be seen in clear terms. These organizations, unlike the United Nations are supposed to be technical bodies whose programs are designed and executed on the basis of scientific criteria. Technical cooperation with countries and the cooperation among countries is theoretically subject to minimum political or diplomatic input. On the contrary, many other aspects of their world of these organizations is dominated by political considerations and managed by diplomats in ministries of Foreign Affairs. The political alliances formed by diplomats for non-health reasons often impact heavily on the execution of technical programs. For example, the influence of diplomats is seen very clearly in the election of heads of these agencies, when the technical competence of the contestants is taken as a given and the decision is based on exchange of political favors essentially by diplomats who see in these negotiations the opportunity to derive benefit for their particular state. You will not be surprised that the election of the Director of these major agencies is not unrelated to the interest of countries in the International Whaling Commission for example.

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These intergovernmental organizations obtain maximum impact from creating a forum for socializing governments into taking decisions collectively. It must be remembered that a collective decision to implement does not automatically translate into equal capacity or desire to execute nationally. The emphasis on striving so mightily to achieve consensus which means convergence of opinion around some defined challenge, is to some degree born out of an inherent belief in Mitranean type functionalism in the sense that shared interests and needs would lead to greater inter-state cooperation and interdependence without necessarily leading to absolutist supranationalism. The concept of health as a bridge for peace which was operationalized so beautifully in Central America during the late eighties, is an expression of this ideal. Mitranean functionalism has to some extent lost favor with critics who believe it is impossible to separate the political from the technical and that there are really no true functional operations.

One of the features of international work in health and a legitimate field of health diplomacy that has received little attention is the practice of diplomacy within these organizations as a feature of their cooperating technically with member states. This diplomacy is practiced when it is necessary to convince all states with so many different characteristics to adhere to and meet the collectively agreed goals. The tools of diplomacy are as necessary here as in the ministries of Foreign Affairs. The great pity is that most executives come into this role without adequate formal preparation for it and are unable to lead organizations in the appropriate direction. But experience has taught me a few lessons.

First, there is need for a thorough understanding of the particular state in as many dimensions as possible-its economy, political culture and the influence and position of the various stakeholders. By stakeholders I refer to the sectors within government as well as to the three essential parts of the state-the government the private sector and the civil society in all its dimensions. The adoption of the collective implies establishing or adjusting national policies and it is the role of the international organization to help diplomatically in moving this forward. But in addition, it behooves the organization to ensure that the proposed goal is scientifically sound. These negotiations may take place unilaterally when one quickly comes to the realization that the collective is usually nearer to the already established positions of the more powerful. In other words the collective may call for less adjustment in the case of the larger members of the community. The negotiations may take place also by fostering cooperation among two or more countries usually with similar levels of capability. In the case of the Americas, the support given to the sub regional groupings such as in Central America and the Caribbean is in part due to the historical links among those countries, but in part because of the relative ease of the diplomatic discourse over the specific health issue. In addition, sub regional collectivity may in fact be one of the spurs for regional collectivity.

This form of diplomacy may be made more difficult because there are no sanctions or rewards to be meted out as in the case of the traditional

diplomacy practiced among states with power as the ultimate lever. As opposed to the traditional diplomacy there is the need for neutrality and being non-judgmental as the starting position. The diplomacy practiced in these areas is more akin to what Heine refers to as network as opposed to the traditional club diplomacy. Diplomatic practice in health is increasingly multilateralized, given the number of actors which must act collectively and one of the essential tools for this must be scientifically sound evidence as to the nature of the problem and the benefits or externalities that drive from collective action. Work is often carried out with political and cultural regimes that are not the regional norm, but that does not preclude the use of diplomacy. Finally there is the capacity to listen. Being able to listen, hear and take criticism is one of the essential attributes of the kind of diplomacy needed in this work.

I accept that health may be a special case, given its essential non-conflictive nature and the general acceptance of the view as articulated so clearly in the American Declaration of the rights and duties of man which recognizes that "every person has the right to preservation of his health through the sanitary and social measures related to food, clothing, housing and medical care, to the extent permitted by public and community resources". Siddiqi makes an interesting observation in this regard. He argues that since "health is a "sacred" undertaking of international health work (of WHO), to which all member states are pledged, there can ideally be no place for the exercise of diplomacy in the classic sense-the conduct of business between states strictly on the basis of national interests. The conception behind an international organization is that its members, far from using it as a place to further their national interests, should subordinate their interests to the international interest." I take a slightly different view. It is exactly in the area of international work where there is need to get a collective decision involving states of different sizes and interests that diplomacy plays a critical role.

But even diplomacy in its classic or traditional form is undergoing change and within the last 2 decades there has been an explosion of interest in the extension of diplomacy into various fields. There is now sports diplomacy, cultural diplomacy, science diplomacy and of course health diplomacy. It is clear that diplomacy and international relations are not coterminous and the concept of diplomacy focusing only on narrow national interests is passé.

Science and scientists have long played a role in traditional diplomacy as well as in health diplomacy. However some semblance of order or boundaries was brought to the field recently by the British Royal Society and the American Association for the Advancement of Science. They described three major facets of science diplomacy-science in diplomacy, science for diplomacy and diplomacy for science.

Science for diplomacy embraces all those efforts and activities undertaken with the proposition that science can bring persons from different political systems and interests together for civil discourse. The

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health sciences figure prominently here in that there is good evidence of health as a non-conflictive area functioning as a platform for dialogue and indeed joint action. This is the sphere of the soft power so elegantly articulated by Joseph Nye who laments that more use is not made of it in modern times. It is here that we find interaction between scientists serving to blunt some of the rhetoric of the Cold War. David Hamburg in his recent book "Give Peace a Chance" describes brilliantly the work of the Carnegie Commission under his chairmanship bringing USA and Soviet scientists together which may have contributed to avoiding nuclear war and as a result of their scientific contact with Mikhail Gorbachev may have contributed to a change in Russian foreign policy.

Diplomacy for science embraces the joint work of international actors for science and the increasing international collaboration for research and notably health research. It is reported from the OECD that from 1985 to 2007 the number of scientific articles with single authorship decreased by 45%. During the same period articles with domestic co-authorship increased by 136% while those with international co-authorship increased by 409%. Many of the world's major problems will only be or have been solved by this collaborative research and action as the benefits of research are global. While the large Hadron Collider which is the largest highest-energy particle collider ever made and involved the work of thousands of scientists from around the world is always mentioned as an example of this collaboration, I like to cite the genuine international collaboration that is being carried out now in the final push to eradicate poliomyelitis from the earth based on well proven scientific concepts. In a rather optimistic comment, one author claimed that "the new peacekeeping force of the twenty-first century is not made up of soldiers; it is made up of scientists, diplomats and others working together to address global challenges".

But it is science in diplomacy that is most challenging. Can science make a meaningful contribution to diplomacy? There are three aspects that I will address. First, there is the role scientists play as diplomats and here I refer to the doyen of scientist/diplomats, Benjamin Franklin. I believe that his scientific background and training allowed him to be stoical in the midst of many of the travails he underwent and certainly his scientific credentials gave him access to what were then described as philosophical circles that might have been closed to others less famous. So great was his reputation that on one occasion when he was being criticized in the House of Lords, Lord Chatham referred to him as "one whom all Europe ranks with our Boyles and Newtons, as an honor, not

to the English nation only, but to human nature itself." I would not go as far as saying that scientists make the best diplomats, but I would argue that diplomats should not be ignorant about science and its possibilities for improving human welfare.

Then there are the many examples of the traditional view of scientific knowledge facilitating diplomatic discourse as occurred in the development of international health organizations. Interstate negotiation for global health goes back over five hundred years, but the modern developments can be traced to the sanitary conferences of the nineteenth century. It was the prevention of epidemic spread and the impact quarantine practices could have on trade and commerce that was the basic motivation for these early efforts. Quarantine represented not only a hindrance to travel and trade as well as financial losses, but also presented opportunities for bribery and corruption.

In the first international sanitary conference of 1851 there were 12 states, each represented by a doctor and a diplomat. The length of the conference-6 months, and the arguments by doctors over the merits and demerits of the theories of contagion versus those of sanitation led to the decision that if progress was to be made doctors who represented the scientific opinion of the day should be excluded. Thirteen of these were held and despite the fact that the vibrio of cholera was discovered by Pacini in 1854 and rediscovered by Koch 30 years later and indeed Koch participated in two of the Sanitary conferences, the basic approach of the international effort was dominated by the thesis that the best thing was to keep the infections out of the country and the major debates on how best this was to be done was mainly within the purview of diplomats rather than scientists.

The main infectious disease of the Americas-yellow fever was of little interest to the European nations, so the Fifth Sanitary Conference was held in Washington in 1881. This was a meeting essentially of diplomats with four experts in medical matters brought to give a patina of science to the proceedings which were essentially administrative. It was here that Carlos Findlay presented a major scientific theory -that yellow fever required a vector and subsequently described that vector as the mosquito that came to be known as *Aedes Aegypti*, which is still a scourge to the countries of the Americas. But at the First Sanitary Conference of the Americas in 1902 at which the Pan American Health Organization was created, there appears to have been a different tone. At the opening of the Conference, the Surgeon-General of the United States as host was very clear. He said "Our deliberations will relate to scientific investigations which alone enable us to be rational in both quarantine and sanitation and which form the foundation and the iron girders of our hygienic structure". Goodman describes in detail the evolution of these conferences into the International Office of Public Health in Paris. When World War 2 ended the United Nations was established, WHO was born and some of the impetus for their work would have come from point 4 of President Truman's 1949 inaugural address in which he pledged "We must embark on a bold new program for making the benefit of our scientific advances and industrial progress available for the improvement of underdeveloped areas".

The global pattern of disease has changed with increasing dominance of the chronic noncommunicable diseases over the traditional communicable disease, but the need for joint and cooperative action is just as great. The control of the vectors of these new diseases is often beyond the capacity of a single nation state although the responsibility for the health of its citizens is the state's responsibility. It was the science of the magnitude of the burden of the NCDs in the Caribbean countries that persuaded them to invest political and diplomatic capital in moving the issue to the level of the United Nations General Assembly. It is science that will facilitate the diplomatic wrestling with issues such as climate change, antimicrobial resistance and the global preparations for the next influenza pandemic. The growth of interest in the nexus between health and foreign policy in the United Nations and more generally is in part due to the ability of the health sector to produce the

science that facilitates dialogue. I refer to science generally and must admit that it is disciplines beside those in the STEM world that come into play here, especially the social and behavioral sciences.

But the more fundamental question that is rarely debated and has import for the training of health diplomats is whether the essential canons of science are of any relevance in diplomatic practice and discourse. The STEM world in which I dwelt originally would have grave difficulty adapting to many of the tenets of diplomacy. I confess that I was weaned scientifically on the works of Sir Peter Medawar and treasured his affirmation that “no scientific theory ever achieves apodictic certainty”. I swore by Karl Popper and his concept of the falsifiability of hypotheses. I believed that science was a logically connected network of theories that represented our current opinion of about what the natural world is like. It is basic to science that assumptions and the data supporting them are subject to review and reassessment and change through criticism from peers. Scientific data and information are public while making information public and inviting validation and possibly rejection is normally anathema to the traditional inter-state diplomacy.

Diplomacy deals primarily in the current reality and secondarily in methods to amend it. The hypothetico-deductive approach to addressing problems elaborated by Popper which is central to scientific endeavor is not part of the diplomatic tool-box. If anything there is more of a tendency towards the inductive approach of JS Mill. The scientist is deeply suspicious of and avoids any form of relativism which accepts the validity of varied explanations. Science cannot accept that there are many different truths about the phenomena of the natural world, while the essence of the diplomatic negotiation is the non-judgmental position. It is interesting that there is renewed debate about the diplomacy of relativism. Pope Francis in a recent address to the diplomatic corps was sharp in his rebuke of what he dubbed the “Tyranny of Relativism” and the need to hold to what are designated absolute and essential truths, which in fact do not derive from other than philosophical or theological discourse. These questions are often at the heart of traditional inter-state diplomacy, as if there are no absolute moral truths, then the defense of such international codes as those on human rights is unsustainable. But scientists always point out that their disciplines cannot address such issues.

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In the final analysis it is through the production of evidence that science can best inform and support diplomacy. The best evidence is physical evidence which is a result of observation and experiment and here I show the bias of the STEM disciplines, but in absence of it diplomats will have to negotiate armed with documentary evidence which may be more within the realm of the social sciences. Evidence is necessary but not sufficient. When evidence aligns with interests in institutions or individuals party to the diplomatic negotiation then there is no problem. The possibility of evidence trumping interests depends very much on the nature of the evidence and the power behind the interests. If the power behind the interests is strong enough, then the strength of evidence is irrelevant. The equation of power determines the extent to which evidence supports or trumps interests. Power resides not only in individuals, but also in institutions

which by definition do not pursue or entertain interests that are inimical to their survival, regardless of the validity of evidence produced. The classic case is the power of the tobacco industry to continue to sell a product designed to kill in spite of the irrefutable evidence acknowledged by the industry itself. The evidence base for plain packaging of cigarettes to limit tobacco use is incontrovertible, yet the tobacco interests fought Australia to the High Court on it and are now threatening small counties with action before the World Trade Organization. But this applies to countries as well. I have seen countries very reluctant to report disease when the evidence of its occurrence was indisputable, because it was felt that such reports would not be in the country's economic interests.

In conclusion, science has always played a role in diplomacy. The health sciences have been instrumental in the formation of the intergovernmental health organizations of today whose effectiveness in aiding the practice and possibilities of global health depend heavily on health diplomacy. Science for diplomacy and diplomacy for science are relatively well understood and there are many examples of them. But the practice of science in diplomacy brings some queries especially in relation to the applicability of the canons of science to diplomatic practice. Scientific evidence can assist in supporting collective action and cooperation which derives from mutuality of interest. Indeed, scientific evidence can support interests as defended by diplomacy, but it is highly unlikely that evidence can trump interests, given the power relationship that dictates primacy of interest.