OFFICE OF THE PRIME MINISTER'S CHIEF SCIENCE ADVISOR

Professor Sir Peter Gluckman, ONZ KNZM FRSNZ FMedSci FRS
Chief Science Advisor

Sir Peter Gluckman's address for the Paolo Budinich Lecture

American Association for the Advancement of Science (AAAS) and the World Academy of Sciences (TWAS) Summer Course on Science and Diplomacy

Trieste, Italy
June 11, 2015

Science diplomacy: Opportunities and challenges for small countries

I am honoured to be invited by TWAS to give the Paolo Budinich Science Diplomacy Lecture during this joint summer school that is focused on capacity building in science diplomacy.

Science and diplomacy come from two very different cultures. Science tries to be values- and bias-free in its processes but it is certainly not in its interpretation and application. But diplomacy, at every step, is necessarily about compromise and advancing ones values and interests.

Yet science and diplomacy have been increasingly drawn together in a way that is strategic yet also opportunistic and challenging. For science has become an increasingly essential tool both *within* and *for* diplomacy, to use the now well-described taxonomy. In addition, as science globalizes, some aspects rely on both informal and formal diplomacy.

Science diplomacy in a formal sense is young. It really only has become a part of the common vernacular in the last 6 years, and if we look back over the history of science within and for diplomacy, it is really only emerged as a core instrument of national interest through the Cold War years.

In this historical context, science diplomacy has been largely described and understood as a tool of the large powers, and largely from their perspectives. When we think about diplomacy for science – we generally think about it in terms of shared 'Big Science' infrastructure, such as the International Space Station, where the agendas have been largely set by the major powers. Or when we think about science for diplomacy it has generally been discussed in terms of large powers projecting soft power. And if we think about science in diplomacy we generally think of verification science and its key role in supporting nuclear arms treaties.

Until now I have been using the classic taxonomy for science diplomacy, which I believe was jointly developed by Nina Federoff, former Science Advisor to the Secretary of State and former President of the AAAS, and by colleagues at the Royal Society in London. But I think this taxonomy omits a number of other important components of science diplomacy that generally are the concern of foreign ministries.

In this lecture, I would like to discuss my expanded taxonomy. For example, **science for-and-within trade** should also be a specific consideration; the rules-based WTO regulatory system relies heavily on science for decision-making and arbitration in areas such as international phyto-sanitary or quarantine control.

There is also **science for-and-within international development**, which itself has several dimensions. Indeed, what kind of aid is most effective is a question amendable to science, or how can we use aid to allow developing countries to take part in the knowledge economy of the 21st century?

And then there is **science as a form of governance,** where the internationally accepted practices and protocols of science are key to the governance of the ungoverned spaces such as space, deep oceans, the Antarctic and arguably cyberspace itself.

There is one more category in my expanded taxonomy but I will introduce it towards the end of my talk.

But my starting point for this talk is to suggest that science diplomacy is much more generalizable in its scope and should not be viewed as the domain of the major geo-political powers. Indeed I would argue that small, developed economies need to be (and indeed are) major practitioners of science diplomacy for their own interests and protection. I would go further and suggest that the examples of the small economies have lessons in this space that may also be of value to developing economies large and small.

Allow me a diversion before I continue so as to give you some personal background.

New Zealand is almost directly opposite Trieste on the globe. It has only 4.5 million people with a land-mass larger than Great Britain. New Zealand was the last significant land mass on the planet to be settled by humans, less than 1000 years ago. A Polynesian group, the Maori arrived perhaps 700 years ago. The first European settlement did not start until very late in late 18th century after Cook's rediscovery of the islands during his scientific voyage – itself an internal science project to study the transit of Venus in Tahiti after which he sailed south to rediscover New Zealand some 244 years ago.

New Zealand has a stable representative democracy with a strong commitment to good governance, zero tolerance for corruption and all major political parties have a commitment to social and environmental development as well as to economic growth. While it is an advanced economy it is unusual amongst its peers in that agriculture remains the country's dominant export category – particularly the export of milk and other dairy products – this is an important point I shall return to. But there are also rapidly growing high value ICT, manufacturing and services sectors. China and Australia are our biggest export markets.

We have also worked hard in recent decades to address the justifiable grievances of New Zealand's first peoples – the Maori, who now represent some 15% of the population. We also have very significant Polynesian population and thus very close ties to countries such as Tonga, Samoa, the Cook Islands and many others. Auckland is now one of the most cosmopolitan cities in the world with a rapidly expanding Asian community.

New Zealand, with its outlying islands, extends from the subtropics to the Antarctic with the world's 4th largest exclusive economic zone. Indeed New Zealand has a vital interest in the Antarctic, including our territorial claim to the Ross Dependency, which is preserved (but may not be enlarged) under the Antarctic Treaty. NZ has a particular focus on the Ross Sea area and we maintain a year-round scientific base close to where Scott commenced his epic and fatal expedition to the South Pole. We also act as the gateway for the expeditions from the USA and several other nations including Italy to the icy continent.

The biggest challenges for any small country like ours are relevance and voice. Unless it sits in a very strategic position geopolitically, its relevance can be uncertain. This is particularly the case for New Zealand, which is physically removed from any of the global centres of

diplomatic concern. Further, except perhaps for those within the European Union that can provide its small member states with a potentially louder voice, small countries have rather soft voices at the global table and this is particularly the case for New Zealand given its stable society, its advanced economy and its geographical isolation.

New Zealand sits some 3 hours flying time away from a larger middle power, Australia. This also can affect our voice. Often it is assumed that New Zealand and Australia have identical interests. Certainly we are close in many ways, but we are also very different and both face the ironic position that within the UN system they are lumped with Western Europe. Yet both countries see their future very much in Asia.

In 2009 I was appointed as the first chief science advisor to the PM and a year later was given the additional role of being science envoy for the Ministry of Foreign Affairs and Trade, which recognized the importance of science diplomacy to a small country. Subsequently I became the founding chair of the International Network for Governmental Science Advice (INGSA) and also the secretariat of the Small Advanced Economies Initiative (SAEI), about which more in a few minutes. It is from these perspectives that I want to describe how science diplomacy can be a valuable tool for small countries. But in doing so, I will also raise some concerns that continue to be a challenge.

I will use my expanded taxonomic framework to give structure to my comments.

Science for diplomacy

Perhaps the most important new question here is: Can science be a valuable tool for projecting the voice of small countries like New Zealand? Can science help spread awareness of and the interests of New Zealand more broadly and in areas that are beyond the reach of our rather small diplomatic service? In Africa we only have three missions, in Latin America and the Caribbean we have only 5 missions, in Europe only 10 missions. Our more intense presence is within the small Pacific states and in Asia. The answer is that I think science can assist and I think there is evidence that it does.

Last year NZ was elected to one of the three European seats on the Security Council on the first ballot against the competition of Turkey and Spain – two larger countries with arguably more obvious influence in many regions. This was the result of a major diplomatic effort by New Zealand, but that effort was not based on promises of aid. Our aid budget must primarily go the small Pacific states where our moral obligations, historical connections and shared populations create an absolute priority. Rather, we had to present ourselves as a credible advocate for the interests of small nations, whether advanced or still developing. In this regard, we made a considerable effort to reinforce the emerging common interests of the developing small island states that have coalesced into a significant grouping. These countries have many common interests ranging from energy security to the frightening burden of obesity and non-communicable disease on the population.

But our interest in small nations extends to issues of policy and strategy. In 2011, I suggested to our Prime Minister that there was much to learn and share with other small economies that had also invested heavily in education, science and innovation. The faced a number of similar challenges: lack of voice, increased exposure to global economic events; and the loss of domestic talent, ideas and companies to larger nations and so forth.

We felt that countries with under 10 million people had a distinct set of policy challenges. Economically they could be more nimble but they were also more exposed. Their internal markets were too small to support an internally-focused economy. We therefore tended to be more strategic and conservative in our fiscal and macroeconomic approaches and give significant consideration to good social safety nets. We also had to be more careful with our

options in the science system as it is not possible to do everything in science and choice and prioritization are inevitable.

For those outside Europe, the domestic market is generally small, which limits the attraction of multinational companies and changes the pattern of innovation. All small countries are concerned about the potential loss of trained people, ideas, companies and value to larger higher performing neighbours.

In response to this suggestion, the PM authorized me and a senior economist in the Ministry of Foreign Affairs to jointly approach other small advanced economies to consider establishing a policy think tank. When we looked at countries of populations less than 10 million and which were defined by the IMF as advanced economies, it was sobering to realize that there are only three such countries outside of Europe: Israel, Singapore and of course New Zealand. All are or feel isolated in some way. Of the larger number in Europe, we approached three to join us: Denmark, Ireland and Finland. All agreed to join the project and the New Zealand government agreed to fund the secretariat which is based in my office. So I guess I act, in this very informal club, as the equivalent of the secretary-general jointly with my economic colleague.

Rapidly the SAEI developed traction. It operates under four major work streams: public science and higher education; innovation; economics; and national branding and voice. The first three streams are based on sharing much detailed data, formal analyses, considerable discourse and agreed projects. The last constitutes a more general conversation amongst foreign affairs staffers, but I mention it because the major focus of that discussion is how do small countries ensure their voice is heard and their interests protected in a world where the traditional multinational architecture is changing. By way of example, we can point to the rise of G7/8 and G20 as core economic policy groups and the generally problematic nature of much of the traditional international rules-based architecture. This Small Advanced Economies Initiative has attracted considerable interest; it remains small, informal and flexible but it has allowed much to be learnt about small economies that in many ways act as a 'canary in the mine' for larger countries. It has started to undertake some joint projects with the OECD and is increasingly seen as an informed voice for matters involving small economies.

Why do I expand on this? It is by way of illustration as a classic case of science diplomacy, where there are clear win-win opportunities in opening new relationships and seeking to learn from each other. The initiative started from a conversation with my counterpart from Denmark, we realized that we were both trying to address issues in the science system that has unique dimensions for small countries and did not allow extrapolation from the larger traditional scientific powerhouse nations.

And this endeavour that is now in the 4th year has given New Zealand much credibility in thinking about the nature of small economies. This message amplified the effect of New Zealand projecting itself as a country that understands 'small'. The initiative featured in speeches of our UN Ambassador in the lead-up to the Security Council campaign of the past two years.

But the challenge of the UN Security Council bid also highlighted how science can be a useful tool to engage with countries where there are few existing ties. For example, how could we show our relevance to many countries – especially in Africa – where our diplomatic presence is small and our trade profile is very limited? A survey of our Universities and research institutes showed New Zealand academics have very credible interactions in many African nations, so science provided at least one icebreaker in our successful campaign.

Science can indeed help make small nations more relevant, allow them to have greater impact on the global diplomatic stage. My own office is extremely active in that regard. I chair the APEC Network of Chief Science Advisors and Equivalents.

Last year my Office hosted the first international meeting on the key issue of enhancing scientific advice to governments and, as a legacy of that conference, I now chair the planning group for the International Network for Science Advice to Governments. This group is actively involved in planning and conducting capacity building on both the supply and demand side of science advice. This network is open to practitioners, academics, academy members, policy makers – all those interested in improving the use science in policy-making from both the supply and the demand sides of the issue.

So moving on **to science in diplomacy and diplomacy for science** – I group these because the example I want to use has multiple dimensions.

Here I want to focus on matter of central interest to New Zealand and where New Zealand had to take a key lead. To illustrate— 20% of global emissions are related to agriculture. Yet food security is a vital and generally dominant concern globally. New Zealand stands out amongst developed economies in our very high proportion of greenhouse gas (GHG) emissions from agriculture as it remains our dominant export industry. Approximately half of our emissions come from farming sheep and cattle and dairy cows, which makes us the highest emitter of methane per capita in the world. The only other developed economy to come close is Ireland – our profile is more classical of developing economies. So with this, let me introduce the Global Research Alliance to Reduce Agricultural Greenhouse Gases – or the GRA.

In 2009 in Copenhagen our Prime Minister proposed that New Zealand might work with other countries to develop a consortium to tackle the issue of GHG production associated with food production. We were clearly interested in the issues surrounding pastoral agriculture but the issue was broader and more generalized as agriculture is responsible for about 20% of global emissions.

We needed to address the issue because our other options to reduce emissions are more limited given we already were at 80% renewable energy and have little heavy industry. There was also the existential concern regarding potential future market resistance to our farm products.

So our diplomats approached other countries to see whether there would be merit in forming a research consortium to tackle agricultural greenhouse gases, and the support was significant. In 2010, I had the honour of co-chairing a meeting in Wellington of scientists and officials from some 27 countries to explore the establishment of the GRA in mitigating greenhouse gas emissions from agriculture. The following year, some 30 countries co-signed a charter in Rome and New Zealand has since then funded and housed the secretariat.

The goals of the consortium are simple: reduce emissions and enhance food production irrespective of farming system. The alliance now involves 45 countries and has many partner organisations. Importantly the alliance has uniquely addressed the key challenge that most countries prefer to spend their research funds within their own borders, while contributing knowledge to a larger project. Recognising this, the key to the GRA is that it is led by scientists not government administrators.

The scientists from participating countries have mapped out research needs and capabilities and formed into 5 groups including: livestock, led by NZ and the Netherlands; rice, led by Japan and Uruguay; cropping, led by Brazil and the USA; and cross-cutting work on soil carbon and measurement which is led by France and the UK. Some of these teams are

making real progress. New Zealand's focus is on the reduction of methane and nitrous oxide from pastoral agriculture and our government has invested significant funds toward truly international research, the only area of science in which we do so. For example, our work on manipulating the ruminant microbiome has involved France, Ireland, USA, etc. The GRA continues to grow and welcomes new members.

Here the diplomatic interests of New Zealand demanded that science be done, but for that science to be done, diplomats had to create the vehicle then get out of the way.

The reciprocal interaction between science and diplomacy is obvious in this example and – yes – a small country can make a difference. Perhaps in the highly charged environment of GHG mitigation at that time, it was only a small country that could have catalysed this initiative.

Science for and within trade

Our economy has been based on trading high quality food. In recent years, there has been a particular market for our dairy products such as infant formula in China. The rules-based approach to trade is thus very important and of course science plays a critical role in both protecting our economy from agricultural pests and ensuring that when phyto-sanitary barriers are applied they are genuine rather than an attempt to raise a non-tarrif barrier.

Science is also important in protecting our trade. Our closest neighbour is Australia. We generally have a very close relationship in every way, except on the sporting field when it is more akin to war, but this did not stop the New Zealand-Australian apple dispute being the longest running trade-dispute in history. The argument was the New Zealand apples, which taste far superior to Tasmanian apples incidentally, carried the risk of fire-blight even though there was no evidence for such. This went on for over 80 years until the WTO ruled, based on science, that NZ apples could be imported into Australia.

Recently our trade was put at risk by an eco-terrorist threat. New Zealand has a unique flora and fauna resulting from our geophysical split from Godwanaland some 80 million years ago. Of particular note, our iconic birds the kiwi and kakapo are flightless and they are being decimated by stoats, which were imported from England over a 100 years ago in a misguided attempt to deal with the rabbit population explosion, itself a result of English settlers bringing rabbits to New Zealand, this time as a fond reminder of 'home'. The only effective way to kill these pests and Australian possums, which destroy both birds and our native forests, is to use 5 fluroacetate (also known as 1080) generally distributed as baits by air in remote forests. Naturally there are some who do not like this approach and late last year activist threats were received suggesting that our export milk industry would be deliberately contaminated with 5 fluroacetate if the government did not discontinue its use for pest control to protect our native species. Our science community quickly developed testing procedures for 1080 and by the time this threat was made public our export industry was fully protected by ensuring that all cans of infant formula that were exported were able to be labelled as having been rigorously tested.

Science will play a central role resolving misunderstandings between countries over trade restrictions imposed to protect human health. A highly-publicized example, currently before the WTO dispute settlement body in Geneva, is a challenge to Australia's tobacco plain packaging laws. Although we don't know the outcome of this WTO dispute, we do know that scientific evidence on the risks of smoking and the relationship between smoking uptake and tobacco packaging must play a central role in the WTO rulings whether Australia's restrictions are consistent with WTO laws.

We all know that science can allow relationships to flourish even when other aspects of a relationship may be strained. This happened between New Zealand and the USA in the 1980s and 1990s. The source of the tension was New Zealand's proud and unremitting commitment to be nuclear-free and this meant challenging the USA's unwillingness to clarify whether any visiting ships may be breaching that restriction.

The result was a break in the defence and intelligence relationship and an effective degradation of our diplomatic status for several years. It has really only been in the last decade that differences have been resolved without New Zealand retreating from its position. But while diplomatic and political posturing by both sides was inevitable, science became a most important safety valve.

Why? The USA kept servicing the Antarctic through New Zealand and this meant a military presence in Christchurch, our second largest city. Our military interacted to support the joint logistics of Scott Base and McMurdo – the main USA base in Antarctica. Our scientists continued to maintain and even enhance their close interactions, and our diplomats had something much more positive to discuss.

This brings me back to science as a form of governance. The Antarctic must in general be considered the jewel in the crown of science diplomacy. Here we have a continent devoted to peace and scientific endeavour. In 1957 at the height of the Cold War the international geophysical year launched considerable scientific cooperation in the Antarctic between otherwise antagonistic states. In 1959 those countries active in the Antarctic adopted the Antarctic Treaty that clearly states that the presence of countries in the Antarctic is for peaceful scientific purposes.

The Treaty and its Protocol on Environmental Protection now includes over 50 signatories, which meet annually to discuss current issues and adopt measures to regulate Antarctic activities. The Scientific Committee on Antarctic Research plays a central advisory role. And the science being done in the Antarctic, while logistically complex, is truly multidisciplinary and multinational. Recently the Scientific Committee met in New Zealand and reaffirmed its priorities.

Science and aid

While organisations such as the World Bank have long studied the science *of* aid, there has been less consideration of science *as* aid. But in fact science can be a powerful aid tool provided it is done with the sensitivities that sometimes escape researchers coming in to post-colonial environments from other countries. Increasingly, the importance of co-production models is appreciated. Thinking has moved beyond the mere provision of technology *per se*. Indeed regrettably, many recipient countries are littered with well-intended but broken-down equipment. Current thinking is now about the provision of sustainable know-how. The New Zealand Ministry of Foreign Affairs and Trade is working on programmes, particularly in Africa, to provide solar-powered electric-fence technology, heat-resistant livestock and enhanced forage plant species and so forth. Science is at the heart of many of our programmes in the Pacific. At the same time, our universities are starting to train African PhD students in the effective use of the combination of such technologies.

My own research career started in the 1970s as a combined research/aid effort in the Himalayas where New Zealand had a particular emotional tie given the feats of the late Sir Edmund Hillary. Under the aegis of his promoting, I was involved in a medical research expedition to understand the biology of cretinism, which is fundamentally due to iodine deficiency but more importantly to understand how to ensure that this community has

access to iodine in an acceptable and effective way. Here science was being used to reinforce and assist a community that had a very unique relationship to New Zealand.

As a country, our primary focus in aid must be on the small and micro-states of the Pacific. They have many issues which require a scientific approach – energy security, managing biodiversity and fish stocks, fresh water security, food security are just some examples where NZ government research organisations are supported by our aid agency to address the issues. These small countries face enormous challenges with climate change. But the particular challenge that I am concerned with is obesity and non-communicable disease.

The 10 most obese countries in the world are in the Pacific and New Zealand must take a lead in supporting these countries to confront that burden. This is one of the reasons the Prime Minister encouraged me to take on the role as co-chair of the WHO Commission on Ending Childhood Obesity, which has proven to be another exercise in science diplomacy as we address the very many perspectives on a very complex and urgent issue. And addressing this challenge is not easy – there are multiple dimensions that need to be considered in parallel and we are dealing with developing economies with few resources at their ready disposal.

This situation leads on to an even more complex question. The digital world offers such countries opportunities to be connected and engaged in ways that were not previously conceivable. But up-skilling is required in order to take advantage of the opportunities. One way that the research institute that I used to head is doing so with the help of our Ministry of Foreign Affairs and Trade is to use distance approaches to up-skill STEM education. This initiative started with creating learning opportunities for school children in Auckland by building a classroom within a world-class medical research institute so that visiting pupils could be exposed to modern science in a relevant and tangible way. Much effort went into developing pedagogically robust ways of reaching children of very different backgrounds. But it was recognized that the same programme could be delivered at a distance by training teachers and providing programmes into the Pacific. We are focused on science education that will make a difference – in this case much of the focus has been on the issues of healthy lifestyles and the obesity crisis.

In my expanded taxonomy there is one more category that I have not yet introduced. That is how that **science which is necessary to address global needs** will be better incorporated into trans-national decision making. The particular dimension that merits deep discussion is the question of how can science play more effectively and appropriately into multi-national discussions and into international organisations where national interests can dominate?

This is complex given that there remain issues of how one ensures effective demand and supply of science advice at national levels. There is no single model as advisory systems are both a product of context and approaches to public reason in different societies. This has been at the heart of recent discussions in Europe.

Nevertheless as I have discussed elsewhere, national science advisory systems need to address three elements: 1) deliberative advice that may come through panels or academies; 2) informal advice that helps politicians and policy makers frame their thinking and is where individual science advisors have a particular role in being a boundary structure between the two cultures of science; and 3) policy and science advice in emergencies where the role of the advisor is much closer to being an active decision maker.

But at the international level even deliberative advice is generally complicated by national interests. The IPCC is one very elaborate model for deliberative advice, but there are many other global challenges where the same principles of honest brokerage that should underpin scientific advice at the national level would be desirable. The problem is we have no model

by which to do so. Ideally science should be provided to international policy makers and decision makers in a way that summarizes what we know and what we do not know, unfiltered by national interests but we have yet to develop processes that do this. The national interests, which are generally values-rich, should really play out against a common understanding of the science, but there is a tension here that requires science and diplomacy to think in quite different ways. This is a subject that requires much reflection but is not the primary subject of today's address.

In this talk I have tried to show how a small country can use science within the diplomatic sphere to protect and advance its interests. I have tried to show that while the classical taxonomy is a helpful heuristic, the potential of science in diplomacy is much wider. Small countries need to project their relevance and influence as much as large countries do – and in many ways even more so. The large advanced economies have inevitable influence and can protect their interests simply because of their economic and political size. But a small country has to keep reminding the world that we are here, we have something to contribute, we can be a constructive and valuable member of the global community. This is not easy. We do not have the resources to have large diplomatic services or to substantively impact on the global economy. Rather we have to show we are insightful, constructive and nimble. Science is a key part of doing so and indeed given the inherently global nature of science, science is a particularly powerful way of projecting our voice.

But this is not necessarily easy to do. For instance, while New Zealand may punch above its weight in terms of scientific productivity, scientific contributions *per se* are not sufficient. We need to use science as I have illustrated in multiple ways to project our interests. But while good science rarely needs diplomatic engagement to manage the day-to-day business of research, diplomacy is needed to build the framework conditions for some kinds of research as I have illustrated with the Global Research Alliance.

But there is a particular challenge. Just as New Zealand worries that its voice in international economic arenas is hard to project because we are one of few advanced countries that is not directly or indirectly a member of G20, I worry about the international science agenda in a similar manner. As science becomes more globalized and the focus on the so-called Grand Societal Challenges becomes clear, the importance of global scientific policy groups in determining the agenda becomes more apparent. Often these discussions reflect the old power blocks in their shape. Similarly we have seen declarations on the side of G8, for example an open access to literature policy, that have global implications for the conduct of science yet many relevant voices are not at the table. This is an inescapable problem and again creates challenges for small countries. The range of international science bodies is large and creates an alphabet soup that approaches the military in its complexity – the cost of engagement both of dollars and in time is enormous. How to prioritize, how to protect our interests? This is an ongoing issue for many small countries both developed and developing.

Part of our response is to actively engage through groupings such as the APEC CSA & Equivalents meeting that I co-chair. APEC is a grouping of 21 economies around the Pacific Rim with a focus on economic development. Its third meeting in Malaysia this year is focused on two issues: science advice in emergencies which follows from the Sendai meeting and reflects the Pacific Rim's too-frequent experience with major natural disaster. The second topic will be one very dear to the heart of the New Zealand psyche – how to marry western scientific epistemologies with those of indigenous peoples.

Another important grouping is the Small Advanced Economies Initiative I have already discussed and a third is the International Network on Governmental Science Advice. These efforts represent a conscious effort by New Zealand to ensure that we do try and project in practical and constructive ways within the global science community.

While my primary appointment is as the Chief Science Advisor, I have secondary appointment as Special Science Envoy to our Ministry of Foreign affairs and Trade. While that role to date has largely been about relationship-building, it is becoming increasingly obvious that science can be and must be an inherent part of our international strategic thinking. Last week our heads of the ministries of science and innovation and of foreign affairs and trade and I met with the aim to ensure that international science in diplomacy and diplomacy for science were more strategically integrated. My sense is that, over coming years, science advisors will become common place within ministries of foreign affairs. After all, we scientist do speak the one true global language – let's use it well.

Thank you.