

EMERGING SECURITY CHALLENGES – CAN GOVERNANCE BE EFFECTIVE?

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An important function of a government is to effectively use limited resources to maximize the security of its citizens. By that measure, I want to offer a comment at the end of my talk on what I saw within the hour on CNN: your president and my president affirming their mutual support for a missile defense installation in Poland.

I want to begin by saying that there is a strategic threat that we could more effectively prevent if we had a strategy to do so. That threat is the potential of malevolent use of an expanding set of technologies, notably genomics and nanotechnology, that share the common characteristic of dealing with very small things – thus, *micro-technologies*. These technologies offer profound benefits for humanity. Unfortunately, these emerging capacities if malevolently applied could do catastrophic harm.

This threat has unique characteristics. First, there is a veritable menu of agents to hit any of a wide array of targets. This is not to assert that preparing and accomplishing an attack are easy. There are profound obstacles. Yet, it is certain that, with the passage of time, scientific progress will erode those obstacles. Whatever is the assessed risk today will be slightly less tomorrow and so on. Also, it should be noted that the attacker need only defeat us once at our weakest point where our preparations have been misdirected.

Moreover, this kind of attack sends a unique message. Any other type of attack, no matter how severe, happens at an identifiable moment in time at an identifiable place. If you aren't there, you are angry and upset but not, strictly speaking, injured by the attack. Thus, a terrorist that wants to hurt London must attack London. But if contagious agents are used, the attack can happen anywhere and spread to the target. If a highly contagious agent is used somewhere, everyone is in peril. And, obviously, the terrorists' goal is to spawn terror, and nothing quite creates horrors comparable to disease.

This is the key point of my talk today: micro-threats physically internationalize the pursuit of security. The inherent nature of these threats is global: malevolent actors from anywhere using pathogens obtained anywhere and refining them in a lab anywhere can release them anywhere to affect people anywhere. To think about these threats only from the perspective of this or that country is simply wrong-headed.

In my opinion, an attack will involve a virus, something that is asymptotically contagious. Anthrax might be used, and of course a well-planned attack could kill thousands. But ultimately anthrax cannot sustain itself. My chief fear is of anthrax as a cover: while massive resources are devoted to managing the consequences of an anthrax attack, a viral infection (which might need time to gain a foothold in a large population) could circulate at will.

How easy is it to get an agent that can be rapidly spread, hardy in the environment, and meet various other characteristics? I don't know, and I'm quite sure that no one knows. It is troubling to say that there are huge information holes: we simply do not know the location of laboratories that have certain capacities, and we do not have records about where are all extremely dangerous agents.

If the terrorist has an agent strain but does not have ready access to a laboratory, could he get usable equipment and set up a covert preparation site. Again, the answer must be uncertain because we do not have an accurate picture of the international marketplace for bio and other micro-technologies. More accurately phrased, we know a lot about many scientific operations, but it's the ones that we do not know about that are the major concern. Right now, we do not have any clear idea about what we don't know.

What we can say with certainty is that the effects of a catastrophic micro-attack could be unacceptable. If there is a highly contagious, potentially lethal virus that someone is deliberately trying to spread, how widespread would it have to be before international transportation is affected? At what point do the tourism and entertainment sectors slow in the face of community fears that anyone could be harboring, however innocently, a malevolently designed disease. How many attacks in how many places would it take before we start hiding our children.

There are positive steps that could be taken. As I've already mentioned, we need to get much better information about where are labs, pathogens, equipment, and other emerging capacities that could readily be put to malevolent use. This census is mandatory – it is difficult to imagine any policy to address any problem that is implemented without reasonable understanding of who the policy might affect. But it is important to say here that the purpose of gaining that information is not to imply that the things being counted are suspicious. On the contrary, there should be incentives for people who are engaged in advanced micro-science to come forward to be counted.

Attention should focus on uniquely sensitive items, and the standards for keeping these items secure should accord with well-understood and accepted techniques for modern science. Indeed, with regard to the security of labs and pathogens, the problem is not a lack of guidelines; the problem is that the guidelines are not, everywhere, rules that compel compliance. These guidelines are not globally binding. Of course, most scientists in many countries comply guidelines. We do not know about the ones that do not. In most countries, even if noncompliance with international guidelines is apparent, enforcement action is unlikely; it may not even be legally authorized.

This leads to the most acute problem: if a suspicious situation arises, there should be a way to detect and interdict it. Each State should be responsible for conducting investigations within its jurisdiction. The harder question is how much residual authority should the international community retain when a State fails to investigate, whether from incapacity or willful blindness. Right now, there is neither authority nor capacity for interdicting malevolent preparations.

I want to portray all these actions as cumulative. As I've said, we need a census system to identify and track legitimate bioscience, and that information should focus on anomalous behavior without unnecessarily burdening or intruding on legitimate science. By requiring all labs to be secure, the risks of illicit diversion are minimized, and a culprit would have more obstacles to preparing an attack. And in the rare circumstance where necessary, an investigation could be useful.

We must pause to consider the implications. Resources will have to be devoted to identifying labs and tracking pathogens, to supervise implementation and enforcement of security standards, to train and equip police to enforce standards and investigate noncompliance, to keep accurate records, and to cooperate across boundaries and through disparate disciplines.

For most countries of the world, indeed for most countries where the proliferation of microscience far outpaces implementation of reasonable control measures, committing resources to micro-threat prevention is to address a threat that has not yet happened while inadequately meeting very real priorities related to combating HIV/AIDS, malaria, etc. Today, 30,000 children under the age of 5 die, mostly due to preventable causes. Tomorrow, another 30,000 children under the age of 5 will die. The next day ... and the next day... In the face of this silent genocide, a fundamental question must be answered: it is illegitimate to focus on malevolent threats associated with advancing science without embracing the reality that science is pivotal to global sustainable development; accordingly, policies to promote the spread of that science deserve respect.

Science is critical to development in two respects. First, science's products can save lives by curing disease, can remediate environmental damage, can make industry more efficient. Second and no less important, the scientific endeavor has developmental implications by strengthening universities, training technical specialists, and spurring investment and partnership across borders.

So here's what I offer: a global covenant for science, security, and development. Emerging threats must be addressed in a broader policy context for promoting science as a public good that is essential to sustainable development; law enforcement must be empowered to focus on the few malevolent actors who would commit a most heinous crime; the responsible scientific community must, globally, undertake reasonable steps to prevent wrongful manipulations of its unique capabilities; and the expansion of science throughout the world should be directly linked to pursuit of and compliance with implementation of measures for reducing risks of malevolence.

But here's the real problem: nobody's in charge. That is, even if we all completely agree on what steps need to be taken, there is no one who is institutionally authorized or capable of promulgating standards, allocating resources, or tracking information. In sharp control to other international security challenges, threats associating with emerging microscience are met with a strategic void. As should be expected, even policy makers who acknowledge these threats are unsure about how to move forward. Moreover, without any institutional infrastructure, there is no way to even think about how to refine legal rules and processes that can keep pace with blazingly escalating technological change.

The culmination is an increasing disjuncture between what we all know is a looming threat whose likelihood and severity will, if unaddressed, grow with time and, on the other hand, a failure of governance to undertake complex yet ultimately reasonable steps to prevent a catastrophe. In the final analysis, too little is being done to advance a strategy for preventing emerging microthreats. As using limited resources to protect security is an important governance responsibility, the current governance system must therefore be adjudged to be failing.

In this perspective, I must return to this morning's televised image of our presidents agreeing to promote missile defense. I must ask how missile defense – even perfectly operational missile defense – will prevent someone from carrying a perfume bottle of disease from anywhere to everywhere. And I must ask how missile defense serves a security agenda that is based on promotion of science and development in a way that appreciates the potential for misuse. Choices must be made between security policies that are reasonably atuned to the reality of today's and tomorrow's threats or mega-projects that have little discernible value for keeping us safe.

In my view, the use of disease for spawning terror is getting easier and offers ways to rattle civilization. Preparations of attack cannot be detected and therefore can neither be deterred nor stopped. If successful, an attack would incomparably serve the perpetrators' objective in spawning terror, yet far too little is being done to prevent the attack. So long as this is the case, governments that pursue missile defense manifest either their incompetence or venality, and their fitness for governance must be challenged.

Thank you for your attention.