



*On a global foresight commons*

Secrets have long been the governing paradigm in national security and government intelligence. But the scientific challenges we face today demand a new ethic of openness.

IN THE FIRST YEARS of the 21st century, our capacities for imagining new realities have proved inadequate. From Madrid to London, Bali to Mumbai, from Katrina-ravaged New Orleans to the tsunami's devastation all around the Indian Ocean, to the most recent financial crisis, the alarms went unheeded until after disaster had struck. Now, as the first decade of the century has drawn to a close, its many shocks make plain that we are living in a world with greater potential for surprise, uncertainty, and threats to resilience. In a time of poorly understood interacting causes and consequences, we require new habits of thinking, new approaches to assessment, and new ways of engaging with the world. Emerging is a world filled with just as much opportunity as risk, but seeing both of those forces and appreciating their interrelatedness requires new lenses and an unflagging awareness of diverse perspectives. It means investing all of our energies to profoundly challenge the status quo.

What we already know with certainty should yield multiple wake-up calls: Approximately 1 billion of the world's people—nearly 15 percent of the global population—face starvation, yet humanity is poised to increase its numbers by another third, to 9 billion, within a few decades. Science, meanwhile, is consistently finding that the climate system is more sensitive than expected: The Greenland ice sheet is melting far faster than previously believed possible, and ice sheets in Antarctica that grew to be some 200 meters thick over a 10,000-year period are visibly disintegrating within only six weeks' time.

While much is known about the geophysical planetary changes under way, the complexity of their interactions creates an infinite variety of uncertainties—uncertainties that our traditional concepts of national security are not designed to handle. Non-linear systems highly sensitive to small changes are the hallmark of strategic security challenges facing all nations in the 21st century. They are categorically different from the predominantly military strategic threats of the latter half of the 20th century, which played out in a bipolar world. Instead of discrete enemies, we now face systemic challenges involving food, water, energy, and infrastructure that imperil the whole planet.

The globalization of national security risks demands the globalization of cooperation, a shift that goes well beyond the bilateral and even multilateral collective security arrangements of the 20th century. Weapons and spies are of little use against escalating strategic risks to the environment from our ever more interconnected economic, social, and natural systems: food shortages, resource nationalization, destabilization of governments, forced migration, rising sea levels, and civil emergencies. These dilemmas command all of our attention, yet no single issue can be addressed in isolation.

National-security experts today resemble the finance experts who missed the warning signs of an impending global economic crisis: They tend to be so specialized that complexity is an unlikely



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factor in their strategic calculus of national security concerns. There are clear signs, though, of emerging requirements for “specialists of the whole” and for a systems approach that can articulate the risks and opportunities inherent in complex, globally interdependent systems. As President Obama said in his speech at the National Defense University in early 2009, “We...know that old approaches won’t meet the challenges of our time.”

In times of sharp transition, it is difficult to distinguish the urgent from the trivial. For most people, it is easiest to cling to outdated paradigms and processes. This approach is sometimes referred to as the “boiling frog” scenario, which concerns the proverbial hapless frog who lacks the situational awareness and foresight to jump out of a slowly heating pot of water. In situations in which so much is unfamiliar, understanding our circumstances in time to translate foresight into readiness, imagination into opportunity, and reality into truth, all requires what Leonardo da Vinci called *saper vedere*, or knowing how to see. Da Vinci’s relentless questioning of everything challenged the conventions and taboos of his time. His wide-ranging talents propelled him to what we today would label an interdisciplinary approach, which in his case led to a mastery of fields including engineering, biology, sculpture, botany, music, philosophy, architecture, and science.

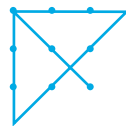
But too many serious professions have taken the anti–da Vinci route; they are given over to experts whose status and incentive systems are based on demonstrating how much they know, not on exploring what’s unknown. Many studies have shown that the experts’ focus on pieces of larger problems tends to make them painfully inept at imagining possibilities. Some of these studies have demonstrated that, more often than not, diversity of perspectives trumps expertise when it comes to imagining future outcomes.

The gift of the artist is to perceive the present by thinking what no one else has thought about. Great artists—and great scientists—detect the early tremors of seismic change in society, politics, technology, religion, and philosophy and represent the world as they see it through new eyes and new understanding. But the shock of the new often challenges orthodoxy, branding many creative minds as threats to the stability of society.

The need for a new global architecture of foresight and risk assessment—a “global

foresight commons”—is unmistakably clear. In the climate-science arena alone, traditional processes for scientific consensus and security assessments lag dangerously behind scientific discoveries. A distributed network serving as a global foresight commons can vet knowledge and insights on new global security challenges. This commons holds the potential to more rapidly synthesize discoveries and raise public awareness in time to mitigate risks and seize opportunities. Since few organizations are designed to nurture such open and largely unregulated global interactions, a global foresight commons must evolve in parallel with existing government and intergovernmental structures. Such a network will serve as a clearinghouse for road-testing novel methodologies and applications, including interactive simulations, for foresight and risk-assessment purposes.

Work catalyzed by the US Department of Energy’s Energy and Environmental Security Directorate has anticipated some characteristics of this global architecture. Beginning in 2007, an initial framework was outlined in the “Glasgow White Paper,” though how this and related global frameworks will coexist alongside traditional national and intergovernmental institutions needs to be worked out. The need for rapidly connecting, updating, and



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translating the best of science into global, regional, and local security-related consequences is incontestable.

The global foresight commons will build on the examples of Wikipedia, eBay, and other such distributed and collective sense-making systems that rely on a globally diverse community of users. It will

serve as a clearinghouse for rapidly aggregating and evaluating information more accurately than individual organizations can possibly do on their own. The commons would expose discoveries, assessment processes, and foresight methodologies to the evaluation of a larger and more diverse community of people than currently possible. A single agency, government, or nation could not achieve the requisite diversity, involving millions of participants worldwide, that such a global foresight commons would entail. It would need to evolve organically, initially in a bottom-up fashion, with an international mix of early contributors, and would eventually need to attract the support of organizations that encourage their members to contribute their ideas to the commons. This system can be thought of as a robust and strategic form of Wikipedia, but with capacities for globally distributed synthesis, and for evaluation of non-proprietary, non-classified, forward-looking assessments: a “StrategicPedia,” as it were.

As a critical mass of participation is achieved, organizations will contribute resources and talent to the global foresight commons, realizing the cost- and time savings of a collaborative approach to mapping risks and opportunities on common security challenges. Such a StrategicPedia, moreover, would transcend the often polarizing, and paralyzing, politics of single-issue advocacy groups as well as the incapacities of individual government agencies and nations.

On planet-wide challenges, the preponderance of needed information and insight is neither proprietary nor classified, and evaluating it in real time in the public domain offers benefits for enhanced societal resiliency. Contrary to traditional, secretive models of security and government intelligence, risks and opportunities in the areas of energy and environmental security must be addressed openly in order to make vivid the potential consequences of what science shows is already happening. A global foresight commons will continuously and clearly bring future possibilities into the present in ways that people can understand and in which they can participate to create a more sustainable future. ∞