

Provided for non-commercial research and education use.
Not for reproduction, distribution or commercial use.



This article appeared in a journal published by Elsevier. The attached copy is furnished to the author for internal non-commercial research and education use, including for instruction at the authors institution and sharing with colleagues.

Other uses, including reproduction and distribution, or selling or licensing copies, or posting to personal, institutional or third party websites are prohibited.

In most cases authors are permitted to post their version of the article (e.g. in Word or Tex form) to their personal website or institutional repository. Authors requiring further information regarding Elsevier's archiving and manuscript policies are encouraged to visit:

<http://www.elsevier.com/copyright>



Contents lists available at ScienceDirect

Futures

journal homepage: www.elsevier.com/locate/futures

Book review

J.C. Glenn, T.J. Gordon, E. Florescu, 2010 *State of the Future, The Millennium Project, Washington (2010)*, , 88 pp., \$49.95 (includes 7,000p CD) <http://www.StateOfTheFuture.org>

In the very wide world of futures thinking, there are many types of futures thinkers. The vast majority are “futurized specialists” who do not see themselves primarily as futurists, if at all. A far smaller number of “specialized futurists” see themselves as futurists, but confine their explorations to one or a handful of issues or sectors. In turn, a still smaller number of “general futurists” are willing and able to cover most if not all issues or sectors in some intelligent way [1]. The Millennium Project, now in its 15th year, is a massive showcase for some of the best general futures thinking available.

1. The Millennium Project at 15: Why It Is Important

In a world of vast and ever-increasing amounts of information about global affairs – and much else – there are few attempts to synthesize overviews. The Millennium Project, headed by long-time futurists Jerome “Jerry” Glenn and Ted Gordon, seeks to do so, by providing “a context for global thinking and improved understanding of global issues, opportunities, challenges, and strategies.” The Project’s annual **State of the Future** report, now in its 14th annual edition, “is designed to provide an independent global capacity that is interdisciplinary, transinstitutional, and multicultural, for early alert and analysis of long-range issues, opportunities, challenges, and strategies.” Until 2009, the Project functioned under the auspices of the American Council for the United National University, and then the World Federation for UN Associations. It is now an independent international non-profit corporation with tax-exempt status, yet its annual report is listed in the catalog of United Nations publications. Quite a feat!

The MP’s “global capacity” is realized in a steadily growing network of project Nodes—individuals and institutions in various countries and regions. The 35 Nodes as of early 2010, up from 29 in 2007 and 18 in 2003, includes a flavorful stew of groups in Argentina, Australia, Azerbaijan, Bolivia, Brazil, Brussels-Area, Canada, Central Europe, Chile, China, Egypt, Finland, France, Gulf Region, India, Iran, Israel, Italy, Japan, Kenya, Malaysia, Mexico, Peru, Russia, Silicon Valley (USA), Slovenia, South Africa, South Korea, Spain, Turkey, United Arab Emirates, United Kingdom, Venezuela, and an Experimental Cyber-Node in Hawaii. Members of many of these Nodes meet for three days prior to the annual meetings of the World Future Society (<http://www.wfs.org>), and then stay on to participate in many WFS sessions. Leaders of the Nodes are considered “essential” for the success of the research compacted into the annual SOF report. Over time, some 3000 people have participated in the Project; last year’s studies involved some 575 people alone! In addition to English, reports are now available in Arabic, Chinese, French, Korean, Persian, and Spanish. The “About Us” page on the website is available in eight non-English languages.

The SOF report continues, year after year, to be *the best introduction – by far – to a broad range of major global issues and long-term remedies*. The “distillation” of information in SOF is greatly helped by Linda Starke, who has edited the excellent reports from the Worldwatch Institute for many years. Still, SOF is a huge bundle of trends, forecasts, and ideas to grasp, sometimes made relatively simple and in many other instances fairly complex. It is best understood part by part.

2. Executive Summary summarized

The introductory overview even-handedly states that “*the world is in a great race between implementing ever-increasing ways to improve the human condition and the seemingly ever-increasing complexity and scale of global problems.*” (my italics). Properly managed, the new technologies will get humanity through the looming environmental, economic, and social conflicts as we move toward a crowded world of some 9 billion people by 2050. But technology is not enough, and “serious global policies” are needed, as discussed in SOF. If current trends continue “over the next 50–100 years, it is easy to imagine an unstable world with catastrophic results.” This may be a polite understatement; some would argue likely catastrophe in the next 10–20 years! [2] On the other hand, “If current trends in self-organization via future Internets, transnational cooperation, materials science, alternative energy, cognitive science, inter-religious dialogues,

synthetic biology, and nanotechnology continue and converge over the next 50–100 years, it is easy to imagine a world that works for all.” In any event, we can concur that there is indeed “a great race,” and then lay our bets as to whether the Cassandras or the Pollyannas have the greater odds of being proven correct [3].

A box on the second page provides a summary of State of the Future indicators on Where We Are Winning (rising literacy rate and GDP per capita, more Internet users, extended life expectancy, etc.), Where We Are Losing (GHG emissions, unemployment, corruption levels, etc.), Where There Is Little Change (HIV rate, R&D spending), and Where There Is Uncertainty (nuclear weapons, forested area). This is properly qualified by a discussion of how climate change could be accelerated by dangerous feedbacks from melting ice and release of methane hydrates.

One can and should argue about which mix of lead indicators to use (e.g., the environmentally oriented Worldwatch Institute has a much gloomier view in the 17th edition of its annual **Vital Signs** assessment of 24 trends), but we can certainly concur that humanity needs “a global multifaceted general long-range view to help it make better long-range decisions.” Several views, side-by-side, would be even better.

3. The 15 Global Challenges

The mainstay of the annual SOF report from its beginning in 1997 has been concise two-page descriptions of 15 Global Challenges, their “regional considerations” in five areas of the world, and prescriptions for what ought to be done. Following UN convention, the Middle East is not included as a separate region, although, as the world’s leading political hotspot, it deserves highlighting [4]. Many of the statements on global conditions are derived from UN reports or from studies by various global NGOs:

- (1) *Sustainable Development and Climate Change*. The world is warming faster than estimates of the Intergovernmental Panel on Climate Change, and even the most recent estimates may understate unfolding reality because of permafrost melting. It is time for a US-China Apollo-like 10-year goal and a global R&D strategy to focus on new technologies like saltwater agriculture, carbon capture and reuse, and solar power satellites to supplement other policy measures.
- (2) *Clean Water without Conflict*. Without major changes, global water demand could be 40% more than current supply by 2030. Planners should integrate lessons learned from producing more food with less water, water storage and treatment, reforestation, etc.
- (3) *Balancing Population Growth and Resources*. Today’s 6.9 billion population is expected to grow to 9.1 billion by 2050; about 20% of this population will be over 60. Urban population will jump from 3.4 billion in 2009 to 6.3 billion in 2050. To keep up with population and economic growth, food production should increase by 70%.
- (4) *Genuine Democracy*. Cites the Freedom House 2010 report, finding that world democracy and freedom declined for the 4th consecutive year, and press freedom for the 8th consecutive year. But new accountability mechanisms are being developed, and the Internet is enabling a new participatory democracy architecture.
- (5) *More Global Long-Term Perspectives for Policymaking*. National legislatures should establish standing “Committees for the Future,” as Finland has done, and national foresight studies should be continually updated and improved. Universities should teach futures research and synthesis.
- (6) *Global Convergence of ICT*. Comments on the growing experience of ubiquitous computing for most people, open source software, emergence of collective intelligences for issues, the new “virtual world” of the Net, e-government, and worries about intellectual property, reliability of information, and cyberwar.
- (7) *Ethical Market Economies*. A long-term global strategic plan is needed to help reduce the gap between rich and poor, by creating 50 million jobs per year over the next decade. Market economy corruption and abuses must also be seriously addressed, with rules based on global ethics.
- (8) *New and Reemerging Diseases*. In the past 40 years, 39 new infectious diseases have been discovered, 20 diseases are now drug-resistant, and old diseases have reappeared. In the last five years, >1100 epidemics have been verified. The best ways to address this problem remain early detection, accurate reporting, prompt isolation, transparent information, and more investment in clean drinking water and sanitation.
- (9) *Improving Decision-Making Capacity*. Many of the world’s decisionmaking processes are slow, inefficient, and ill-informed. Remedies include on-line software to support timelier decisions, synergetic analysis to increase “win-win” outcomes, ubiquitous computing, transinstitutional decisions, use of blogs, and training programs for decision-makers.
- (10) *New Security Strategies*. Half the world continues to be vulnerable to social instability and violence, and the Global Peace Index rating of peacefulness in 144 countries again declined slightly. Massive public education programs are needed to help promote respect for diversity, and backcasted peace scenarios could show how peace is possible.
- (11) *Changing Status of Women*. The Gender Equity Index 2009 computed by Social Watch shows that the gender gap is not closing in most countries, despite progress in universal primary education. “Men attacking women is the largest gap today,” as measured by death and casualties per year (about one-third of women suffer gender-based violence during their lives). Educating men would help, but it is a slow process. Legal systems should guarantee gender parity.
- (12) *Transnational Organized Crime*. Crime networks continue to grow, and a global strategy to address this threat is still lacking. Havocscope.com estimates world illicit trade to be >\$1 trillion/year, and the World Bank estimates \$1 trillion in

bribes paid annually. The economic crisis has opened new routes for TOC crime. All states should develop national strategies to counter TOC and rethink drug control.

- (13) *Energy Needs*. World energy demand is expected to increase by 40–50% in the next 25 years, with much of the increase due to China and India. To meet this demand, an annual \$1.1 trillion in investment is needed. Total global renewable energy investment for 2010 was some \$200 billion, up nearly 50% from 2009. Japan plans to have a working space solar power system in orbit by 2030, and other innovations are accelerating, e.g. concentrator photovoltaics and microbial fuel cells.
- (14) *Accelerating Sci/Tech*. Discusses growing access to all sci/tech knowledge on the Internet, the ability to create life, a new sensor to detect viruses and bacteria within 24 h, nanotechnology products growing by 25% in the past year to >800 items today, nanobots, the Large Hadron Collider, future ethical issues, and the need for a global collective intelligence system to track S&T advances and forecast consequences.
- (15) *Ethics in Global Decisions*. Discusses international meetings that seek to increase integrity and accountability, problems in verifying compliance with the UN Convention against Corruption, pressures from Transparency International and other NGOs about anti-corruption efforts of governments, the UN Global Compact to promote multinational business ethics (now with >6000 participants), UNESCO's Global Ethics Observatory, concerns about organized crime and terrorism, and the need for spiritual education and creating better incentives for ethics in global decisions.

4. Special studies

About half of SOF is devoted to the Executive Summary and the 15 Global Challenges, both written for a general audience. The second half shifts rather sharply to various studies conducted during the previous year, which often get into considerable technical detail and thus may be limited to professional futurists.

The five special studies in the 2010 SOF:

- *Producing State of the Future Indexes Using the International Futures Model*. Describes introduction of the MP's State of the Future Index (an aggregation of 28 indicators such as school enrollment and GDP/capita, first introduced in 2001) into the University of Denver's International Futures modeling system, developed by Barry Hughes (see <http://www.ifs.du.edu>). IFs seek to facilitate exploration of global futures through alternative scenarios.
- *Building Collective Intelligence Systems*. The MP developed the Global Energy Network and Information System (GENIS), described in the 2008 SOF, which seeks synergies among data/information/knowledge, hardware/software, and experts. Based on this model, MP is building Global Climate Change Situation Rooms in South Korea and in the Kuwait Prime Minister's Office. Other CI applications will be created for each of the 15 Global Challenges, and interconnected with other information systems around the world.
- *Emerging Environmental Security Issues*. A summary of monthly MP reports supported by the US Army Environmental Policy Institute since 2002, identifying >2000 issues with potential security or treaty implications, as concerns military damage to the environment, environmentally caused conflicts, and protecting the environment (see <http://www.aepi.army.mil/reports>).
- *Latin America 2030*. A Real-Time Delphi study by the chairs of the MP Nodes in Latin America, with participation by >550 people. Some highlights: respondents saw about a 50% chance over the next 20 years that Latin American countries would follow the EU model with a single regional currency, that GDP/capita will increase by 50%, and that tourism will greatly increase; "on the darker side is the possibility that organized crime becomes more powerful than some governments."
- *Futures Research and Gaps Around the World*. A survey completed by 32 of the Nodes on what is not well-researched. Almost all Nodes consider cultural and social issues – "soft issues" – to be underestimated. More than 130 topics were received, clustered into nine categories: sci/tech, politics/globalization, environment/resources, foresight methods, business/economy, knowledge transfer/education, sustainable development, society, and regional topics.

Special studies in the **2009 State of the Future** discussed the *2009 State of the Future Index* (with two scenarios of "no economic recession" and "lengthy recession"), *Some Elements of the Next Global Economic System over the Next 20 Years* (a survey of 217 participants from 35 countries considering 35 elements such as new GNP definitions, a small tax on global public goods, greatly increased disclosure of tax havens, wealth redefined, a global minimum living wage, and a single global currency), *Real-Time Delphi Studies* (a relatively new and efficient method for collecting and synthesizing expert opinions, based on the original Delphi technique co-developed by Theodore J. Gordon at RAND in the late 1950s), *Futures Research Methodology* (introducing an updated CD available from the MP—see below), and the U.S. Army-sponsored *Emerging Environmental Security Issues*.

The **2008 SOF** explains the Real-Time Delphi Technique and GENIS (the Global Energy Network and Information System), and discusses *Government Future Strategy Units and Some Potentials for International Strategic Coordination* (with brief overviews of 28 future strategic units in Brazil, China, Egypt, EU, Finland, Japan, Mexico, Romania, Singapore, UK, UN, US, etc.—most of them in the office of the prime minister or president). The **2007 SOF** includes a study on *Future Possibilities for Education and Learning by 2030*, based on a Real-Time Delphi collecting judgments of 213 experts around the world. Likely possibilities (>50% probable) include Web 17.0, integrated lifelong learning systems, chemistry for brain enhancement, just-in-time knowledge and learning, keeping adult brains healthier longer, individualized education, and portable AI devices.

The **2006 SOF** presents four *2020 Global Energy Scenarios* (Business as Usual assuming little or no change, Environmental Backlash of highly effective environmentalists, High-Tech Economy of accelerated innovation, and Political Turmoil of more conflicts and wars).

5. Summing up

This relatively long synthesis of the Millennium Project is nevertheless a bare bones appreciation of an awesome, extensive, and – apparently–increasingly and deservedly influential project. Much of the SOF information is available at <http://www.StateOfTheFuture.org>, and literally *all* of it is available on the CD included in every print edition of SOF. The updated 2010 CD has some 7000 pages containing the cumulative work of the MP since 1996, and details of all of the studies concerning the SOFI, global scenarios, governance, sci/tech, collective intelligence systems, futures studies around the world, promoting sustainable development, environmental security, education, future ethical issues, implementing futures research in decision-making, and annotated bibliographies.

It is somewhat like “Grandma’s Attic,” with lots of different items, some new and some old, some useful and some not-so-useful or a bit out-dated, some for general interest and some for specialized professionals, and something – if not many things – that ought to be of great interest to anyone interested in global affairs and futures.

Adding to this huge trove, the Project offers an additional “Grandma’s Attic” in a separate CD-ROM, **Futures Research Methodology: Version 3.0**, edited by Jerome C. Glenn and Theodore J. Gordon (Millennium Project, 2009/\$49.50 plus p&h), with 39 chapters totaling about 1300 pages. It claims, surely without any question, to be “the largest, most comprehensive collection of internationally peer-reviewed methods and tools to explore future possibilities ever assembled in one resource.” Chapters are in separate files in word (.doc) and PDF format, and cover such methods as environmental scanning, text mining, the Delphi method, real-time Delphi (see **2008 SOF**), the futures wheel, trend impact analysis, wild cards, systems perspectives, decision modeling, morphological analysis, scenario planning, simulation, prediction markets, using vision, normative forecasting, chaos and non-linear dynamics, the multiple perspective concept, and more.

6. Beyond the Millennium Project: tackling the daunting double disconnect

There is much to admire here, in the annual SOF report, the CD on futures research methods, and the 35 active Nodes of an ever-growing global network. At first glance, one might think that, for better or worse, the Millennium Project is not only taking over the world of futures thinking, but the world as a whole. This is far from happening at present, however, and there are formidable barriers to gaining much further influence in the immediate future. This can be briefly described as the “double disconnect.”

First, the world of futures-relevant “current affairs” literature in the English language alone is huge—some 1000 titles a year, at the very least. My new experimental website, <http://www.GlobalForesightBooks.org>, has begun to document these titles, starting with publications in 2009 and 2010, most of them addressed to global issues such as governance, human rights, security, global warming, development, the global economy, sustainability, food, energy, health, education, cities, transportation, and science/technology. Two unfortunate findings: virtually none of the titles are classified as “futures studies” or “futures research,” and, as a general rule, the literature is hugely fragmented—essentially, no one cites anyone else. Thus, I have yet to encounter any mention of the Millennium Project in any other book, or in any article in any futures journal. (It should be noted, however, that the many excellent publications from OECD and various UN agencies are also seldom mentioned.) The Project may be influential among some planners in some countries (which is a lot more than can be said for virtually all books), but does not appear to have influenced futures thinking in books.

The fragmented state of futures thinking, and, more broadly, current affairs thinking cries out for integrating the many scattered pieces. Recognizing this, the Millennium Project is wisely building “collective intelligence systems,” starting with GENIS (Global Energy Network and Intelligence System), first described in the 2008 SOF. This appears to be all well and good, but begs the question of how well it covers the key players and issues, and, even if done well, how it compares with competing efforts. In the energy arena, for example, the OECD-related International Energy Agency has published **Energy Technology Initiatives: Implementation through Multilateral Co-operation** (IEA/OECD, Sept 2010/114p), which highlights recent achievements of 42 IEA Implementing Agreements—multilateral technology initiatives—enabling countries, businesses, and NGOs to share research on breakthrough technologies and carry out demonstration programs. An entirely different approach to collective intelligence – without using the MP term – is offered by former US Vice President Al Gore [5], who summarizes the results of more than 30 “solutions summits” of leading experts worldwide, with chapters on the latest thinking about solar, wind, biomass, geothermal, nuclear, carbon sequestration, etc. A detailed comparison of GENIS with the IEA report and Gore’s solutions summits would be very illuminating.

Even if substantial progress is made in the “horizontal” disconnect among experts, the formidable task of overcoming the “vertical” disconnect between experts and the public may be even more daunting. In our “postnormal era” of complexity and contradiction [6], one of the major contradictions of our time is that politics in the established democracies seems to be marching backward toward clichés and dangerous simplifications, rather than forward to address national and global challenges in any well-informed way. The values underlying the Millennium Project and its 15 Global Challenges can be characterized as “global progressivism,” a global variant of what on the national level is called progressivism and liberalism,

and seen on the so-called political spectrum as being left, green, and sometimes “radical.” I fully share these values, which pretty much come with the turf of looking at global issues.

But, as anyone who follows current political tides can readily see, at least in the US, the trends are very much against acting to any substantial degree on any of the 15 Global Challenges, especially in dealing with the threat of climate change. Instead, all of the political buzz in the media is about the know-nothing Tea Party and its many candidates, which seeks to cut government spending and taxes, restore “Freedom” and principles of the 18th century Founding Fathers, and crack down on illegal immigration and Muslims. Environmental issues are far down on the list of voter concerns, and “ethical market economies” to reduce rich–poor gaps and create jobs for all (Global Challenge #7) seems like a utopian dream in the current political climate, not to mention “ethics in global decisions” (Global Challenge #15). In the face of the Great Recession, the percent of the US public believing that climate change is man-made and a serious global threat has declined, reflecting similar changes of public opinion in the UK and Germany. This disconnect is a failure of civic education, in all of its dimensions.

The Millennium Project has done much in its first 15 years. And it has fresh ideas and good momentum to accomplish much more in the next 15 years and beyond (assuming that a second generation of leaders can continue the pioneering work of Glenn and Gordon). It may put a dent in the horizontal disconnect of fragmentation among experts, by refining and expanding its collective intelligence initiatives. But the second disconnect between knowledgeable, rational experts and voters (and their representatives) will be much harder to overcome, especially in the new world of information hyper-glut and the Internet driving us into “the shallows” [7]. The MP makes no pretense to tackle this problem, but if it is not addressed by many responsible media and educators, the views of the Cassandras as concerns “the great race” will clearly prevail.

References

- [1] M. Marien, Futures-thinking and identity: why 'Futures Studies' is not a field, discipline, or discourse; a response to Ziauddin Sardar's 'the namesake', *Futures* 42 (2010) 190–194.
- [2] For recent catastrophist views, see L.R. Brown, *World on the Edge: How to Prevent Environmental and Economic Collapse*, W.W. Norton, New York, January 2011, on the race between political and natural tipping points, and C. Hamilton, *Requiem for a Species: Why We Resist the Truth About Climate Change*, Earthscan, London, May 2010; <http://www.GlobalForesightBooks.org> Book of the Month for May 2010, on a September 2009 Oxford meeting of climate scientists, who now see a “four degree world” as probable.
- [3] W.E. Halal, M. Marien, Global Megacrisis Survey: four scenarios on a pessimism/optimism axis, *World Future Review* 1 (October–November (5))(2009) 48–52, Readers are asked to assess the likelihood of four scenarios: Decline to Disaster, Muddling Down, Muddling Up, and Rise to Maturity. Ongoing results are posted at Halal's <http://www.TechCast.org>.
- [4] Although the Middle East is not singled out in the main SOF report, the accompanying CD has 91 pages of “Middle East Peace Scenarios” prepared in 2004 and probably still of use.
- [5] A. Gore, *Our Choice: A Plan to Solve the Climate Crisis*, Rodale, Emmaus PA, November 2009, 416 pp., Book of the Month for April 2010 <http://www.GlobalForesightBooks.org>.
- [6] Z. Sardar, Welcome to postnormal times, *Futures* 42 (2010) 435–444.
- [7] N. Carr, *The Shallows: What the Internet Is Doing to Our Brains*, W.W. Norton, New York, June 2010, Book of the Month for July 2010 <http://www.GlobalForesightBooks.org>.

Michael Marien
5413 Webster Road, LaFayette,
NY 13084, USA
E-mail address: mmarien@twcny.rr.com