WORLD FUTURE SOCIETY U.S. NATIONAL CAPITAL REGION CHAPTER

FUTURE*takes*

Your international platform for future related issues

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INSIDE THIS ISSUE

By Monika Kosmahl Aring

One of the things I love about the future is that it is empty. Just plain empty. When you think about it, by definition, the future has nothing in it. However, we seem to live as if we were the victims of demented administrative assistants who take our "*past*" files and put them into the drawer marked "*future*." So of course, we only end up recreating the past, over and over and over.[1] I'm not talking about forecasting, and extrapolating trends, and all those valuable tools. I'm talking about what I believe may be our fundamental way of avoiding dealing with the possibility that we can create the future intentionally.

What if the future is a blank canvas on which we are creating the future, moment by moment with all our actions, and lack of actions? I find that this way of looking at the future empowering because it allows for possibility of something different than what is possible if we just project the past into the future. In other words, how the future will look could be thought of as a function of what we say will go into it.

When I worked with Fred Jervis, the author of ***Future Planning***, and the Key Results logic frame technology[2], I learned that it is possible to project myself into the future, look

See Creating Future, continued on page 19

The Rise of the Self

Why the 'Individual' is Becoming Increasingly Paramount

By Carolyn Swarr Stauffer
Johannesburg, South Africa

Kaleidoscope of Self: The warm summer sunlight streams down on to bleached grass on which young people of every description recline. Skin of every hue is out on display as tattoos and the marks of body piercing repetitively punctuate this ornate pastiche of humanity. Visible nipple rings wink at onlookers as they take pride of place in this parade of self-styled individualism. The location is Zoo Lake, the gathering an African Jazz festival on a balmy mid-day in central Johannesburg. Here one finds an eclectic urban setting which welcomes a 'meeting space' for post-modern young people, a favourite haunt for many, and one that I frequented myself as an emerging adult.

See Rise of the Self, continued on page 9

from the PRESIDENT *by* LIMOR SCHAFMAN

Dear Members,

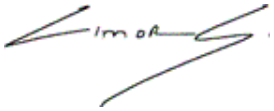
Welcome to 2005!

Our first issue of 2005 sets the tone for the year for the Chapter as well as for our involvement as members. A variety of articles in this issue explore our roles as individual Selves, as part of a community, and our very role here on Earth. 2005 continues to show us that many and varied needs exist in the world which we are in the position to address, personally and professionally. We just need to choose how.

Here at the Chapter, 2004 saw much growth in the breadth of our programming (the addition of the book club and luncheon series with the Woodrow Wilson Center for International Studies as well as our continued dinner events), the quality and world wide reach of **Future Takes** (we now have contributing editors in Venezuela, France, South Korea, and Hong Kong), and our Outreach into the community of corporations, organizations and agencies in the Region.

In 2005 will we continue to enhance our programming variety, build on our successes with **Future Takes**, and further develop our connection with the Regional community. To accomplish these goals at a volunteer organization, we need active participation from our membership. To borrow from a famous slogan, "We Need You!" We will have several Board positions opening at the end of this year (August, 2005), and now is the time to start becoming involved to ensure a seamless transfer of responsibilities. Please contact me with your questions about how to get involved.

Thank you for your continued support of the Chapter. We are delighted to have you as members. And here's to an invigorating, thought provoking and active 2005!



from the INTERNATIONAL PRESIDENT *by* TIMOTHY C. MACK

Hello,

Well, the last half of 2004 could certainly qualify for the category of "Interesting Times" for the World Future Society as an organization. Especially since not every new non-profit president has the opportunity provided by the outpouring of ideas and energy received from the WFS membership in response to my call for member input and advice. One strong message I heard is that the Society needs to be more involved in connecting with young people of all ages. I took this to include both students and young professionals, and our Future Generations Fund program has been going full speed ahead in this direction for the past several months.

For example, WFS is participating in a CyberFair with the Global SchoolNet Foundation, where students from around the world compete on educational web project development around the theme "Unite and Prepare for the Future." These students will examine the conditions that will affect the future of their communities, and around the globe. Working in small teams, they will conduct original research to produce high-quality web-based responses to these problems. These entries are judged first by groups of their peers, and finally by a panel of World Future Society judges to determine the 'best of the best.' Finalists will be joining us in Chicago as our guests to present their winning entries to the conference.

WFS is also working with another group in the science and technology area to develop "Discovery" tools for school-age inventors to solve new and challenging problems. This program is based on a recent Smithsonian conference on Inventing for Humanity and modeled on an approach in Japan where high school students successfully produced a major breakthrough involving hydrogen-powered cars.

At the college level, WFS is assessing the state of university training in the area of foresight studies around the world, and will be releasing a comprehensive study of this area by the end of the year. As well, we have been holding a series of focus groups with university departments and relevant professional associations concerning the type of training they would find useful in both academic and work settings. These and related matters have been an area of global concern, and the foresight community needs to better understand the options for developing new tools and teaching futures skills in ways that reach the broadest possible audience.

Other recent initiatives have included a foresight policy conference at Tamkang University in Taiwan and a Nanotech innovation conference at Rensselaer Polytechnic Institute in New York State, both co-sponsored by the World Future Society. We are also working with faculty at George Washington University to develop a conference on Space Business toward the end of 2005. This effort is part of an adult learning program at WFS that is aimed at mid-career and post-retirement audiences, and we are working with a variety of organizations to reach those targets.

See International, continued on page 24

FUTURE TAKES

Future Takes is the newsletter of the National Capital Region World Future Society (NatCapWFS), which is based in Washington, DC, United States of America. In addition to the NatCapWFS, **Future Takes** serves other interested professional societies in the greater Washington DC metropolitan area as well as other chapters of the World Future Society worldwide.

Future Takes welcomes contributed articles that serve one or more of the following objectives:

a. Contribute to a reasoned awareness of the future and the importance of its study,

b. Advance serious and responsible investigation of the future,

c. Promote the development of methods for the study of the future,

d. Increase public understanding of future-oriented studies,

e. Facilitate communication and cooperation among organizations and individuals in studying or planning for the future.

In addition, **Future Takes** publishes book reviews, future studies exercises, discussion threads, letters to the editor or equivalent correspondence, and summaries of NatCapWFS programs. All published material will normally follow the guidelines delineated herein for contributed articles.

In accord with the NatCapWFS objectives to promote free dialog and the exchange of ideas on matters concerning the future, **Future Takes** does not align itself with political entities including but not limited to political parties, political action committees, or political platforms. In addition, **Future Takes** does not advocate particular ideologies or political positions.

Any article published in **Future Takes** including any original article written by **Future Takes** editors represents the viewpoint of the author(s) and does not necessarily represent the official position of the NatCapWFS or the greater World Future Society.

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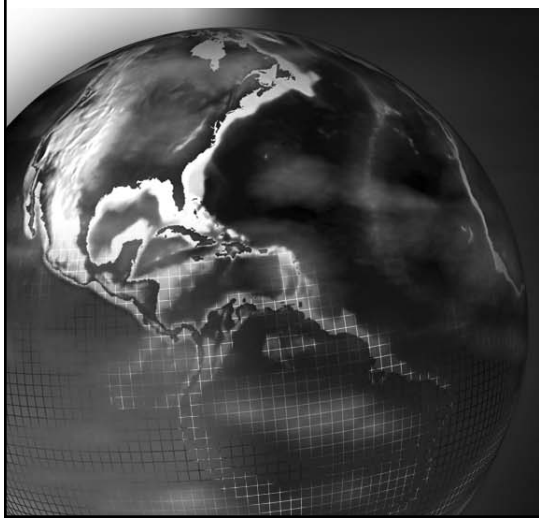
Give Us Your Perspective on the Future



We are looking for people with vision in any area of interest or expertise to write a future-oriented article for ***Future Takes***. Your vision may come from personal experience, reading, lecture notes, or a topic that in your view is important for the future. Please share your thoughts with our chapter members, preferably in 1000 words or less. Send your contribution to **futuretakes@cs.com**.

The Future Generations Fund

By Tim Mack

The World Future Society has embarked on an exciting new set of related programs, for 2005 and beyond, designated the Future Generations Fund (FGF), which will provide support and resources to young people everywhere as they prepare to participate in a rapidly changing world - one in which foresight will be an increasingly vital skill.

The FGF programs address the critical question: How can we help to ensure that the youth of today will understand their choices, have the capacity to make the best decisions, and create the best possible outcomes in their future roles as voters, workers, and leaders?

The Future Generations Fund is a programmatic endeavor that stemmed from the commitment and mission of the World Future Society. It is based on the conviction that futures education can bring great benefit to students and youth the in following areas:

* Thinking of the future can affect behavior in the present and clear personal goals can stimulate motivation and achievement.
* Anticipatory skills can allow students to deal with uncertainty and to manage change more effectively.
* Reflective and critical thinking is needed to identify trends and weigh alternatives.
* Identification of value judgements underpinning alternatives assists students in understanding society and human nature.
* The skills of thoughtful decision making and creative imagination are developed by the demands of forward thinking.
* The ultimate outcome of consideration of more just and sustainable futures is responsible citizenship.

The Fund serves as an umbrella, enclosing a range of programs that focus on guiding and helping youth. Following is an outline of a few of the programs under development:

Educational Web Design for High School and College Students

This program will be developed in partnership with the Global SchoolNet Foundation (www.globalschoolnet.org), which manages a network of 70,000 teachers. Students will be encouraged to 'Prepare for the Future!' by thinking about their own future plans, the conditions that will affect the future of their community, and issues of global importance. Students, working in small teams, will conduct original research to produce high-quality, educational web projects, which will be available as learning tools to millions of people around the globe.

Competition judging initially takes place online, as the students themselves evaluate the projects of other schools, by using an online assessment tool designed by Global SchoolNet. The top-ranking entries are reviewed by a panel of Society judges to determine the 'best of the best. The winning projects will be archived in a searchable online library, and serve as a model and inspiration for future projects. The WFS awards presentation for 2005 will take place at the World Future Society conference in Chicago at the end of July.

Teacher's Guides to the Future

A centerpiece of this effort is an update of a prior WFS effort to capture the leading futures curriculum materials for teaching foresight available around the world. The initial project, entitled "Prep 21" for 'Preparing for the 21st Century' proved very useful to educational practitioners but has not been revisited for a number of years. It will involve educators across the globe and include curriculum, teaching materials and a summary of best practices. Ultimately, recommended guidelines for teaching students how to think about and optimistically prepare for the future will be part of the package.

Scholarships at the WFS Conferences

The Society offers special opportunities for students who wish to attend its conferences. The selection process is managed locally and the funding shared between the local WFS chapter and the international office. Additional funding has been provided by donations by individual members of the World Future Society. Finally, WFS offers even further discounts for larger groups of students. One of our largest student contingents is at Tamkang University in Taipei, Taiwan, where a foresight course is required as part of an undergraduate degree.

Youth Program at WFS Conferences

This program enables young people to share their experiences and insights with their peers and provide new insights to their older colleagues. As well, certificates of achievement can be provided for youngsters completing programs of learning about the future. These certificates can motivate young people to think more intently and constructively about their own futures as well as the more general future of human civilization. With adequate funding, cash awards can also be offered for young people producing the most outstanding work.

Web Resources: "Youth Net" Youth-To-Youth Program

This gives initiative for new programs to the students themselves. New ideas can be shared, discussed, and even uploaded onto the site for other groups to review. An on-line chat room for young futurists is part of the package, as is a youth presentations track for imaginative and innovative events at each annual meeting. Especially promising is the worldwide aspect of this effort, bringing young people together from across the globe.

See Future Fund, continued on page 18

Here's Your Chance!

Networking Opportunity - Show Us Your Interests

In an effort to promote networking among people who have similar future-related interests while also maximizing our own responsiveness to reader interests, **Future Takes** asks for your participation. Think back to your original affiliation with the World Future Society and/or any of its chapters. What was it that attracted you to our organization? What were you seeking? Please take a few moments to let us know, and tell us which of the following areas, if any, interest you:

* Emerging technologies, including nanotech, biotech, IT, and AI
* Health and healthcare
* Environmental issues
* Energy and resources
* Social trends
* Demographics
* The arts
* Retirement patterns
* Careers and working patterns
* Lifestyles in general, and the quality of life
* Family life
* Recreation and entertainment
* Privacy
* Cultures and values
* Religion and spirituality
* Economics, wealth, and trade
* Education and learning
* Agriculture, food, and nutrition
* Media and communications
* Space exploration
* Transportation
* Housing
* Manufacturing
* Cyber-democracy
* Government, governance, and politics
* Communities, governance, and urban issues
* Legal systems
* Business issues
* Infectious disease - the next killers
* The information age, including information overload
* National defense, war, international relations, and the nation-state
* Creativity
* Science in general
* Philanthropy and venture capital
* Volunteerism
* Personal growth
* Excellence and greatness
* Leadership
* Tools and methodologies used by professional futurists
* ... and, the future in general (e.g., how does it happen?, cycles that influence the future, major challenges that will face us in 2030, and even futurism itself).

If we missed your favorite future-related topic after all these tries, what did we forget?

Send your contact information and your list of interest areas to *futuretakes@cs.com*. Also let us know if we may share your contact information (e-mail address) with other members and readers who have similar interests.

Dave's ThinkTank

Issue of the quarter: Wealth was once land, then oil, among other things. What will wealth be in 2020? In 2050? What will be the basis for our economy in these years? (Examples: hunting and gathering, then farming, then manufacturing, then technology, and now information. What's next?)

Have your views on this topic, or on previous think tank topics, published and considered by your peers in the US National Capital Region Chapter and in other WFS chapters across the globe. Send them to futuretakes@cs.com.

MEET A MEMBER

Sue Snyder hails from Annapolis, Maryland and is on the Board of Directors of the Regional Chapter of the World Future Society as our Membership Chair. She first was exposed to the WFS while at the US General Accounting Office. In the WFS she has found a group of people who think about, plan for and dream about a better future.

Sue has over 25 years experience designing, developing, implementing and managing learning programs in educational, governmental and corporate environments. She also has a background in organizational development. Her industry experiences have included organizations in financial services, professional services, information technology, transportation, insurance, telecommunications, software development, and Federal and State government. She also has been involved in change processes including a Total Quality Management initiative, a reengineering process, a CMM initiative, a corporate acquisition, and she assisted in a small company spin out.

Two and a half years ago Sue started her own company called the Knowledge Network, LLC and continues to work with individual performers, as well as large organizations to increase ability and enhance performance. She presently is working with an organization as they do strategic planning, is working on an E-learning program for a Federal agency, is an adjunct faculty for the IT division of Northrop Grumman, and is doing executive coaching.

In her spare time Sue loves sailing, kayaking, music, and travel. She also gives some of her time to Initiatives of Change, where she has learned much about the intricacies of conflict resolution and peace building.

Futures Research Methodology

Version 2.0

Jerome C. Glenn and Theodore J. Gordon, editors
American Council for The United Nations University
A Millenium Project Publication
www.acunu.org

A book review by
Jay Herson

Jerome C. Glenn and Theodore J. Gordon have updated their earlier work to compile an 843 page, 27-chapter CD presenting a much-needed "encyclopedia" of the state-of-the-art of futures research methodology. The CD contains both .PDF and .DOC formats. Each chapter represents a method - e.g. Delphi methods, futures wheel, cross-impact analysis, technology sequence analysis. The chapters average 30 pages in length and are written by the people who developed the methodology - Glenn and Gordon themselves, Joe Coates, Harold A. Linstone, Alan Porter, etc.

The editors have organized each chapter by History, Description of the Method, How to Do It, Strengths and Weaknesses of the Method, Frontiers of the Method, Samples of Applications and Bibliography. This ensures that the reader will get a good description of each method and find sources of further information. Each chapter is called a module and is independent of all other chapters. Thus, the reader need not read chapters 1 through 5 in order to be able to comprehend chapter 6 as would be the case in a textbook. The only drawback in use of this CD as a valuable reference is that the extensive bibliography that accompanies each chapter is current only to 1994. Readers must wait for version 2.1 for the updated bibliography.

The introductory chapter is a "must read" for people new to the field as well as a good orientation for more experienced readers. The chapter makes a distinction between futures research (decision oriented, drivers and scenarios) and future studies (subject oriented, what are the new technologies in energy, medicine; new trends in entertainment, education). Forecasting is dichotomized into normative (what future do we want) and exploratory (what futures are possible). In addition the 23 futures research methods covered in this volume are described in a tabular taxonomy as being - qualitative, quantitative, normative and / or exploratory. This is useful and gives the reader a perspective that they might have not previously considered. On the other hand, this kind of distinction might cause debate among futurists. The editors welcome this kind of scholarly review. However, considerable time in hair-splitting debate is characteristic of fields that are either hopelessly academic or whose time has passed - e.g. anatomy, philosophy, and spherical harmonics.

Similarly, planners are described as looking 3-5 years in the future but futurists as looking as long as 25 years down the road.

Further distinctions are made between historians (what has happened), journalists (what is happening) and futurists (what could happen and what we might do to bring about a desirable future and prepare for potential undesirable futures). This is useful but the tone of this passage may lead some to enhance the role/importance of futurists at the expense of historians and journalists. Similarly, planners are described as looking 3-5 years in the future (I have heard them described as tactical futurists) but futurists as looking as long as 25 years down the road. The paragraph continues to explain how the work of futurists can enhance the importance of planners but not vice versa. My concern applies here as well but it can also be said that the futures research field needs a shot in the arm so these kind of distinctions might encourage more to enter the field and give a renewed spirit to existing futurists. Heck, everyone has an aunt, uncle or cousin who is a historian, journalist or planner. How many of us are within three degrees of separation of a futurist?

Readers of chapters on the Delphi method and environmental scanning are likely to learn more than they already know about these techniques. For the futures wheel I especially liked the three-level wheel (future impacts, current inputs, historical forces). I have never seen that before. The cross impact analysis module is similarly useful but typos in formulas and errors in calculations abound here. This can only discourage the reader trying to get a handle on the mathematics and creates a credibility gap with other chapters. More serious proofreading would be recommended for future versions.

Navigation is easy within modules but not between modules. The reader must always go back to the table of contents on the first 'page' of the CD to move to other chapters. However, this is not a major problem and may be merely a reflection on my lack of sophistication with Adobe Acrobat.

In general I would enthusiastically recommend this CD for those interested in learning about futures research or future studies, those fairly new to the field as well as fully entrenched futures professionals. Historians, journalists, planners, anatomists, philosophers and spherical harmonicists are welcome as well.

Jay Herson serves on the adjunct faculty in Biostatistics at Johns Hopkins University and is an Associate Editor of ***Future Takes*** *and a member of the Board of Directors of the US National Capital Region Chapter of the World Future Society.*

TERRORISM *The Future of War or Just Another Phase?*

By Tommy T. Osborne

Not so long ago, I heard that terrorism was the future of warfare. That interested me enough to examine the premise and I trust it will interest you enough to engage in an interactive conversation with me and others on the probability of that premise being true in the future.

"Terrorism" is an emotion laden term which requires definition for clarity. We've all heard the saying: "one man's terrorist is another man's freedom fighter." Even if that's true, what are we talking about? Microsoft's online dictionary is a start. It and other dictionaries (military, political, legal) describe terrorism as Political Violence: the threat or use of violence, usually against civilian targets to gain political, social, economic or religious ends, including intimidating opponents, gaining participation in government or getting economic benefits. The perpetrators frequently see themselves as the victims of some horrible wrong. Some terrorism is an adjunct to guerilla war - violence against combat forces - but for the sake of this discussion, I'll exclude that option.

Violence against non-combatant targets by non-state actors to achieve political or social ends is not new, nor is it based in any particular "belief system" or geographical area. Some references begin the history of terrorism in 66 AD, when Jewish zealots murdered both Jewish collaborators and Roman Officials. Others skip the Middle Ages, when Islamic Hash-Shashin killed important enemies (and possibly gave birth to the term "assassin"). They overlook the plot to blow up the English Parliament in the 17th Century, the Boston Tea Party (destruction of private property for purposes of political change), John Brown's anti-slavery raids in the 1860s, the incendiary assassination of Archduke Ferdinand in 1914, the explosion of Catalan and Basque anger, etc, etc. Many historians show limited terrorism between 1900 through 1946 because nation-states were engaged in major force-on-force combat (World Wars I and II, for example), although there were significant terrorist acts during that interregnum -including LA times being bombed in 1910, the Wall Street bombing in 1920 and Irgun blowing up the King David Hotel in 1946.

The U.S. State Department published a list of "Significant Terrorist Incidents 1961-2003" (http://www.state.gov/r/pa/ho/pubs/fs/5902.htm). The time slice and selection are somewhat arbitrary; for example, the Ulster Volunteer Force attacks in 1966 are not counted. Despite its imperfection, I used this source to compile illustrative data by year and region to show the global distribution of terrorism by occurrence. Using target or attacker or cause would yield a different matrix and probably different conclusions. This snapshot in time with a particular point of view simply shows the global sweep and the apparent increase in terrorist acts.

Terrorism is a tactic, a tool of those who feel powerless to attain their goals within their own political system and who think they are too weak to defeat that system's military forces face to face. They also feel their cause is important enough to die for and to kill for. Accordingly, terrorists engage in asymmetric combat - leveraging their force through acts which draw instant media exposure and which inspire fear or loyalty out of proportion to the act itself. These acts exploit the physical and psychological weaknesses of their targets as well as play to the desires and fears of the target audiences. Some of the seeming increase in the number significant terrorist acts may be related to the reporting by global media in support of their own profit motive and reporting/editorial bias. The rise is certainly related to actions by governments who once ignored the acts or classified them as criminal rather than terrorist.

Three general causes of increased terrorism may flow into the future. The first is political - the tearing apart of multi-ethnic nation states (Yugoslavia; USSR) and the coming together of ethnics to make nations (greater Kurdistan) - no matter the correctness or fallacy of the reasoning. Second, the rise of the United States as a peerless combatant in symmetric war leaves some no place to turn but to asymmetric means. Third, the explo-

Year	North America	Central America	South America	Africa (1)	Europe	Middle East (2)	Asia (3)	Russia
1960s	1	1	2	0	1	0	1	0
1970s	3	0	1	2	6	3	1	0
1980s	1	3	1	2	15	5	7	0
1990s	3	2	19	14	12	12	13	2
2000-03	4	0	7	4	4	60	30	10

U.S. State Department Significant Terrorist Incidents 1961-2003
Notes: (1) Includes North Africa; (2) Includes Iraq and Iran; with 17 incidents in 2000-2003 from Iraq; (3) includes the Asian republics of the former USSR, i.e., Tajikistan, as well as Afghanistan.

See Terrorism, continued on page 24

Book Discussion

The Wisdom of Crowds

By James Surowiecki
Doubleday, *ISBN 0385503865*

Synopsis of the November 2004 Futurist Book Group meeting; summarized by Ken Harris

How appropriate that on November 3, a day after the American public rendered collective judgments on who should fill thousands of offices and on hundreds of ballot questions, the chapter-sponsored Futurist Book Group discussed ***The Wisdom of Crowds: Why the Many Are Smarter than the Few and How Collective Wisdom Shapes Business, Economies, Societies and Nations*** by James Surowiecki. The author's central idea is that group judgments are better than individual ones. He says that if you put together a big enough and diverse enough group of people and ask them to make decisions affecting matters of general interest, that group's decisions will, over time, be intellectually superior to that of the isolated individual. A "wise crowd" has diversity of opinion; each crowd member has some private (not necessarily expert!) information about the subject. A "wise crowd" has independence; the opinions of crowd members do not determine those of other members. A "wise crowd" has decentralization; each crowd member has local knowledge. Finally a "wise crowd" has a mechanism for aggregating the judgments of its members. Crowds find solutions to three kinds of problems; cognition problems, which have definitive solutions; coordination problems, which require members of a group to figure out how to coordinate their behavior with each other knowing that everyone else is trying to do the same; and cooperation problems, which involve getting self-interested distrustful people to work together.

The author provides many examples of the judgments of crowds. Crowds can give correct answers to questions before expert panels do. The price of Thiokol stock declined after the Challenger space flight disaster; Thiokol O-rings were subsequently determined to be the cause of the crash. Crowds ultimately answer questions that have many potential right answers. At the turn of the 20th century, hundreds of manufacturers were making steam, electric and gasoline-powered cars; by the 1920's only a few makers of gasoline-powered cars remained. Crowds regulate themselves to assure the safety of all; thousands of people walk on New York City streets without bumping into each other. In the financial realm, we do not behave like pure economic men and deal sharply with our customers. Instead, we recognize the long-term benefits of mutual trust and deal fairly with them even though sharp dealing would net us more in a single transaction.

Surowiecki also shows how group decision processes can go awry. Small groups like the space shuttle Columbia Mission Management Team are liable to make bad decisions for several reasons. Group members have great influence on each other's judgments. Members seek bits of information which confirm their initial hypotheses. They emphasize consensus over dissent and prefer "the illusion of certainty to the reality of doubt." Small groups says Surowiecki can be structured so as to render decisions that are better than any individual group member would make, but this is rarely done. Expert small groups like the Nobel Prize winning economists who ran the Long Term Capital Management Fund are especially likely to make these kinds of strategic errors.

Future Takes readers will find the book provocative. It may also make them better futurists because it provides powerful reinforcement for the notion that you can and should learn about the future in ways besides seeking the opinions of technical subject matter experts. The challenge is to creatively find ways to tap into the collective wisdom of non-experts.

Book Discussion

Digital Soul

By Thomas Georges
Westview Press, *ISBN 0813340578*

Synopsis of the October 2004 Futurist Book Group meeting; summarized by Ken Harris

On October 6, The Futurist Book Group had its liveliest meeting yet at **Politics and Prose**. The group discussed ***Digital Soul*** by Thomas Georges, a provocative inquiry into the issues humanity increasingly will have to face as machines become more and more intelligent and capable. It asks very detailed questions about the true nature of humanity and intelligence. A former Bureau of Standards Research Scientist, Georges believes we are well on our way to a future in which machines will dominate human beings. He points out that they are continually gaining the ability to do things that used to be thought possible only for humans such as playing championship chess. This gives him the basis for attacking the traditional teaching of all religions that there is a human soul that is distinct and apart from the physical and chemical human body, and he does so at great length toward the end of the book. Georges believes advance human planning can avert the dangers of a future in which machines would harm humans. Harm is certainly possible because machines will gain intelligence in ways that will become increasingly difficult, and eventually impossible, for humans to understand, and machines will find ways to protect themselves against hostile action by humans such as shutting the power off. This advance planning will involve deciding what legal rights intelligent machines will have and developing ethical codes for human-machine and machine-machine interaction. However, readers are left with the impression that humanity is drifting, for good or evil, toward a machine-dominated future without this advance planning. Readers may enjoy the references in the book to science fiction, which Georges shows is now becoming science fact.

Book Discussion

The Hype About Hydrogen

By Joseph J. Romm
Island Press, *ISBN 155963703X*

Synopsis of the January 2005 Futurist Book Group meeting; summarized by Ken Harris

The Futurist Book Group's first selection of 2005 was ***The Hype About Hydrogen*** by Joseph J. Romm. Romm's central ideas are that the switch to a hydrogen economy (i.e., a time when a substantial fraction of our energy is delivered by hydrogen made from sources of energy that have no net emissions of greenhouse gases) is technically feasible and highly desirable to prevent global warming, but that transition will not be easy. He explains in great detail why it will be especially difficult to energize the transportation sector with hydrogen and concludes that the transition will require intervention by government in the marketplace on an unprecedented scale. Romm held various positions in the Department of Energy in the Clinton Administration and currently heads the Center for Energy and Climate Solutions.

Romm shows that there is fairly strong near-term potential for energizing buildings, especially commercial buildings, with hydrogen fuel cells. They can be economically competitive with fossil fuel systems by co-generation of electricity and heat. However, they are likely to be economically competitive only in newly constructed buildings because of the high-cost of retrofitting existing buildings. They do provide highly reliable electric power, but business owners who need highly reliable power are not likely to switch to fuel cell power solely for that reason. This is because first, fuel cell power is only slightly more reliable than electricity from the electric power grid, and second it is still a largely untested technology. There is also good potential for energizing new homes with fuel cells using co-generation. However, getting the right infrastructure in place will be a challenge. Installation may require specially-trained plumbers and electricians. Moreover, for home owners to have sufficient incentive to install fuel cell systems, they will have to be allowed to sell any excess electricity they produce to the electricity grid at retail whereas in most states they may do so only at the much lower avoided cost.

The characteristics of hydrogen make it especially challenging to use as a transportation fuel. First while, hydrogen is abundant in nature, it is chemically bonded in other substances. So energy has to be used to free it, and producing that energy causes environmental pollution unless it comes from a non-polluting source. Second, hydrogen is one of the least energy dense fuels. So, to gather enough of it for practical use, it has to be highly compressed, and then it must be stored in special tanks, which onboard a car or truck add weight. Third hydrogen is highly volatile. To power the US transport sector with hydrogen will require setting up a totally new infrastructure that will deal with all these characteristics of hydrogen. The infrastructure will include the equipment to be installed on millions of vehicles and at thousands of filling stations and a system for transporting the hydrogen to the filling station. Many wise decisions will be needed to avoid the expensive undertaking of building this new infrastructure more than once. Moreover, the economics become more questionable as the internal combustion engine becomes far more efficient and less polluting and as hybrid cars grow in popularity.

Romm's last chapter "Choosing Our Future" is a multi-part, long-term strategy for conversion to a hydrogen economy. The key element in his strategy likely is "prepare the public for the tough choices ahead." Futurists should read this important book and accept this challenge.

Rise of the Self

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But the trendy vibe that pervades this atmosphere is one that can be found in any number of other global locations, from Tokyo, to Rio, Tel Aviv, Soho or Georgetown on a Saturday night. Young people flood to these centres of emancipated expression in a carnival of public exhibition. In a world where the predictability of Baby Boomers has become redundant, the nascent 'Millennial Generation' leaves its mark, with their canvas being the space they inhabit most vociferously, their own bodies.

In fact, images of individual Self-creation abound in popular culture. As Madonna would remind us, we are always in the process of 're-inventing' ourselves, morphing into a variety of private and public personas that are sometimes as disjointed as the characters in Pulp Fiction. The seamless meta-narratives of the past no longer subsume or leverage very much influence on this experience of diverse personal realities. It appears to be all a matter of joining the hectic dance of random possibilities, with fewer (or possibly only newer) strictures attached.

Opposites that Attract: In today's world two distinct polarities leverage against each other, pulling us in opposite yet inextricably connected directions. The one pull is towards a seemingly monolithic (often Westernised) global culture, and the other pull is towards the resurgence of a more localised (often ethnic) identity. In Africa where our historic understanding of collective survival through community ('letsema') has been highly valued, it seems we are now trying to straddle the divide between splintered allegiances. Our comfort level has been critically injured because of our preoccupation with the growing cleavage between local identity and an urbanised global mass culture.

In fact, the rise of immersion in identity comes as a response to the need to create some viable form of anchorage in a post-modern world of

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many choices and few heroes. Nelson Mandela and Mother Theresa are rare public fixtures in a media marketplace where the David Beckhams of this world lose grace with as little as one too many strokes. The shelf-life of popular market attention has become as fleeting as a nanosecond, and this has intensified people's tendency to fixate on the one 'constant' - themselves.

The Centrifugal Pull of 'McWorld': Entrapment in global mass culture is characterised by seduction into the 'McWorld' reality, a whirlwind marketplace of popularised images and name-brand allegiances that seem very disjoined from a rural or village reality. While these pulls may seem like opposites, (traditional identity versus 'McWorld' fixation) they are really just two sides of the same coin, two dissimilar twins. At the end of the day, the pressure leveraged by these two forces pushes the millennial generation back into the arms of the almighty post modern arbitrator - Self. With urbanisation has come the disbanding of many close-knit traditional communities, and this has given added power to the commercialisation of the individual persona.

These counter-pulls on the modern psyche serve as the matrix for the dissolution of a cohesive sense of personal wholeness and the creation of multiple identities, which feature in a variety of segmentations of life. More appropriately this article should have been entitled the 'Rise of the Selves.' Many if not most contemporary movie and music stars create a myriad of identities and lead multiple lives; our now late South African music diva, Brenda Fassie, being no exception. In the words of Michael Foucault, the father of Post Modern philosophy, "Do not ask me who I am, and do not expect me to remain the same." Not only do material objects present endless possibilities, but now people, having commodified themselves, are also objects of infinite and unknowable transformation.

Of course we could not have stopped here without mentioning our global celluloid mistress, the old dame Hollywood. No longer does she spin out grand meta-narratives of epic proportion, but in their place we now view sleek individual caricatures with silicon proportions. The 'individual' is now the entry point exhibition for the world's paramount cinema of display.

Liberation or Clear & Present Danger? What is clear in Africa is that our existence here is being increasingly enshrouded by the cacophony of the all-pervasive influences of the global media, burgeoning new technologies, and the roar of urbanisation. Accompanying this deafening noise is a marked moot silence from the ties, ('constriction' or 'safety' depending on your vantage point) of family and community, the cornerstones that were previously believed to be society's hallmarks of stability. From Shebeens in raunchy Rockville, to bars in Johannesburg's upmarket Melrose Arch, the question is the same; what do we want to keep from the 'old ways', and what from the 'new' is worth exploring. The answer is well summarised in the caption of a gigantic signboard on the Old Potch road leading into Soweto. It reads: "Your rules. Remember, they are exactly that - Yours."

Increasingly there are divergent new shapes and configurations of relationship that defy previously held definitions of the structure and texture of traditional social fabric.

Increasingly there are divergent new shapes and configurations of relationship that defy previously held definitions of the structure and texture of traditional social fabric. In the Post-modern age, the sometimes random and often juxtaposed placement of relationships within our lives lack the cohesion that signalled the 'know-ability' of previous eras. While for some this brings with it the threat of insecurity, for others it breathes the fresh air of the emancipation of Self.

Tenuous Pillars: In addition to family and community, other traditional institutions such as governance have also become partial casualties in the Self's stampede towards personal 'rights' and individuation. In Africa as elsewhere, the issue of migrating individuals (more commonly referred to as the 'refugee problem') has visibly impacted assumptions about the 'separateness' of nations. We now see leveraged against National Rights the assertion of the primacy of universally held Individual Human Rights. Here again, in the political arena, the individual Self (and their rights) emerge as a formidable force to be reckoned with.

While South Africa in its democratic infancy, may still be cautiously holding on to a certain idealism about governance, many other countries world-wide have lost faith in the ability of the State to provide its citizens with basic commodities and security. Just ask our northern neighbours who live under the tyranny of 'Uncle Bob' Mugabe. George B. N. Ayittey refers to such tyrannies as 'vampire States', corrupt governments that suck the lifeblood out of their own citizenry. Such examples of patrimonialism have dealt a severe blow to our confidence in a collective 'African Renaissance.' At the end of the day for many the rule still appears to be 'each man for himself.' What is debatable is whether that is the most sustainable paradigm to take into our future.

A Market Fix? Economic factors also leverage themselves as suitors to our ongoing dance with Self. The paradox is that while today's vision of economic 'progress' beckons us to ever expanding arenas of exploration, convenience and profit, it does not suc-

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cessfully address the problem of personal discontent and alienation. We now intrinsically understand more about the web of interdependencies that envelop all of our human interactions, but this has not counteracted our ongoing affair with the inherent loneliness of navel-gazing. This discontinuity between progress and contentment brings with it the possibility of post-modern psychic 'homelessness' and what Carl Rogers refers to as psychological 'narcissism'. This is the dilemma that acclaimed sociologist Peter Berger refers to when he says that the post-modern era has birthed an abundance of economic opportunities but a death of sacred meaning.

In his book ***The Future of the Self***, Walter Truett Anderson asserts that today we are in the process of constructing and deconstructing the Modern Self. Our very core-most conceptions and paradigms are being altered, discarded or reshaped. Paired with Nietzsche's comment that "God is dead," comes the knowledge that the early twentieth century's 'Organisational Man' (pardon the innate sexism here) is also dead and/or is being deconstructed. Stripped of such core personal identifiers as traditional conceptions of trade (life-long profession) and faith (traditional religious affiliation), the contemporary person now becomes more easily prey to the whims of market fixations. Anderson calls this trend the 'New Economics of Identity.'

In a work in progress entitled ***The Economy of Icons***, Ernest Sternberg puts it this way:

"Firms now prosper less by making commodities than by endowing tradable products, whether material objects or human performances, with the heightened capacity to appeal - in short, by making icons. And consumers in turn make their way in this world through heightened iconographic receptivity."

The New (Non)Absolutes: Another interpretation of the forces at play in our 'Global Village' (an oxymoron perhaps?) posits that in fact there is neither a dearth of meaning nor a lessening of community allegiances. Rather there are just new definitions that have surfaced. New definitions of family ('blended' families and single-sex unions), new definitions of community (interest groups, cyber communities, resurgent homage to ethnic clustering) and with the death of the 'nation-state' has come the call for new definitions of 'globally sustainable' governance. It should therefore not surprise us, that there are also a myriad of 'new' definitions of the Self, each identity parading itself at leisure along the catwalks of life's multiple corridors.

As they ply the boardwalks and fast begin to fill the boardrooms, the Millennial Generation celebrates this lack of equilibrium in life systems. Endorsing a sort of pre-modern view of Self, this generation relishes the fragmented, earthy and 'pagan' aspects of our psyche, celebrating these aspects as the norms in both the work as well as private spaces of our lives. Self-revelation which often courts an ethical relativism, is frequently idolised (sometimes at the expense of social connectedness). The popularity of Bill Clinton's recently released book ***My Life***, highlights the attraction of contemporary society to public displays of lavish introspection.

Wild Cards: It is at this pivotal juncture that we are reminded that the eyes of the crocodile, barely visible above water, are but a small part of the beast's true mass. The story behind the story is that we often do not even understand the nature of the pilgrimage upon which we embark, and serendipitously we discover along the way spin-offs that we could never have anticipated. As renowned theologian and scholar G.K. Chesterton reminds us "At least five times the 'faith' has to all appearances gone to the dogs. In each of these five cases, it was the dog that died." So too, as the structures of traditional institutions give way to paramount productions of Self, we may be surprised to see who ends up dead.

The nascent rise of the Self continues to confound us precisely because it reminds us of the incredibly strong and profound human need for identity. Yet Africa contributes the learning that human identity can most fully be realised in relation to others; "Motho, ke motho, ka batho" (I am who I am in light of other people). To balance our contemporary appetite for individuation we may do well to deepen our engagement with the old African adage that says,

"If you want to go quickly - travel alone.
But if you want to go far - travel with others."

The rise of the 'Self' could be for us a Pandora's Box, it's mixed blessings bestowing on us both a freeing as well as quelling force in our quest for human meaning and enlightenment.

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[Points for consideration: What else is driving the opposing trends, globalization of culture and tribalization of sentiment? What will the next dominant culture be? For example, will it be group based or more individual based? What are the implications of the rise of the self to sense of community? To governance? To peace? To living lives of fulfillment and positive adventure as opposed to lives of maintenance? Send your comments to futuretakes@cs.com.]

Look what you missed!

Megaforces Changing Health Care

How will we receive care in 2025?

Synopsis of the October 27, 2004 dinner program presented by Dr. Bill Rowley; summarized by Darlow Botha

What megaforces are changing healthcare as we know it, and what kind of healthcare might we expect in 2025? When will diseases like diabetes, cancer and heart disease be eliminated? Can we live until the ripe old age of 125? What would the world be like if the focus of health care shifted from treating diseases to preventing them and creating health? How can our health care system evolve to effectively cover all Americans while being cost effective and of high quality? Or, is healthcare doomed to become even more dysfunctional and expensive in the coming years? Do we even know what we want with healthcare? These questions were among the issues addressed by Dr. Bill Rowley, a noted healthcare futurist, at the chapter dinner program on October 27, 2004.

Can we live until the ripe old age of 125?

RAPID TECHNOLOGICAL ADVANCES

Dr. Rowley addressed a comprehensive range of questions and issues of health care, from now through the next twenty years. Tremendous advances in technology impact health care - an 18 month doubling in computer technology affects many other technologies, importantly the information technology that determines how we acquire and apply our knowledge. He explained the time scales of change - less than two years for computers, 10 years for applications, 10 years to decades for societal changes, and centuries to eons for human nature.

SUPERLONGEVITY

We have already seen how advances in both medical care and knowledge of the human condition, along with increasing insight into physical (diet), mental (stress, mental attitude), and societal (a sense of belonging and purpose) aspects of health, have increased human life span significantly. Cellular biology continues to unfold the modes of aging, illustrating the potential to reverse many of the trends. Improved public health measures, nutrition, and medical knowledge over the last century can be viewed as stage 1 on the way to super longevity. The next stage is envisioned to last through most of this century, maybe extending the average lifespan to 175 years through continuing advances in science and research on all fronts. In stage 3 we can imagine near-immortality exceeding 300 years! It is even envisioned that nanobots will roam through the body, policing, even repairing degenerative processes!

Is healthcare doomed to become even more dysfunctional and expensive in the coming years?

INCREASING LEVEL OF CONSCIOUSNESS

Asks Rowley, who wants it? Who will get it? And - will society use this power wisely or abuse it? We have philosophical models: Maslow's hierarchy of needs; Spiral Dynamics' 8 states of development, from instinctive-survival to holistic; one from Ken Wilbur relating the individual (interior and exterior) to the collective (cultural and social), which offer the possibility of understanding the implications of radical changes in longevity.

BUT WHAT IS HEALTH?

We haven't really answered this question, even though we spent $1.8 TRILLION on Health and Health Care. Is health solely the absence of disease? How will future societies view health and health care? Rowley offers a view of health as a wholeness on all levels - mental, emotional, spiritual, social, and environmental, in addition to the physical. The new view of health must encompass all of these aspects.

Says Rowley, we must build on societal creation, the external environment providing the opportunity for the internal environment to build a high level of control supportive of health in the broadest sense, eliminating the self-destructive effects of bad diets, smoking and drinking. The traditional approaches must also focus on poverty and the community that greatly affect the quality of life, which in turn impact both internal and external positive experiences of self-worth and motivation to responsibility and stewardship to community at all levels. These are all factors with far greater impact than the absence of disease.

In this manner, the focus of health shifts - from I to we to us to all of us. As important qualities, Rowley suggests equity, fairness, solidarity, sustainability, and individual preference, with the insight that health is really a synergistic interplay of many factors. Thus, health is the responsibility of everyone in our global society, because in the end we are all interconnected and interdependent.

TECHNOLOGICAL ADVANCES IN HEALTHCARE

Technological advances include the understanding of biology at the cellular level, the development of diagnostics allowing remedies individualized to the patient and his/her unique genetic and physical make-up.

Rowley explores many aspects leading up to 2025, developing scenarios for prospective medicine, biomonitoring with emphasis on home-centered care with built-in monitors, especially for the elderly and frail. Collaborative teaming (including the patient!), and the idea of a "life coach," who might even be robotic or at least assisted with information tech-

nology, all constitute components of Rowley's vision of the future.

BROADER INSIGHTS

Rowley offers additional insights into the unexpected and far reaching aspects of new technology. As we have eliminated diseases such as smallpox, we may be able to cure or mitigate some of our difficult diseases by 2025.

He lists the political, economic, legal and social aspects of medicine, discussing malpractice costs (less than one percent), medical errors and compensation, and the adverse effects of defensive medicine. Statistics of the current system include 45 million (15% of the population) uninsured and the costs to society - $34.6 Billion paid by governments, $6.1B eaten by hospitals, and an estimate of the economic value of forgone health at over $100B. Annual deaths total 225,000, resulting from unnecessary surgery (12,000), medical plus other errors in hospitals (27,000), hospital-acquired infections (80,000) and adverse reactions to medicines (106,000).

NEW CHALLENGES

Challenges on the horizon include balancing the conflicting values involved in medical records, the application of evidence-based medicine, and accommodating an understanding public that is assertive and fully involved. However, health care is an intricately entangled web of economic, professional, political and social forces that will require a clarity of vision and resolve to adjust to the demands imposed by 125 million Americans with chronic diseases, of which those with 5 or more chronic conditions account for 1/2 of Medicaid spending, 2/3 of Medicare spending, 3/4 of private insurance spending, 2/3 of prescription drugs, to a total of 80% of health care visits.

In discussing the increasing longevity of people, living healthier lives, accomplished by this expensive management of chronic diseases, Rowley gives a measure of this expense in the number of workers paying into Medicare and those receiving care (a ratio of 16.5 in 1950; dropping to 3.4 in 2000, projected at 2 in 2030). He notes that the costs are high because of new drugs and technology, population aging, administrative expenses and in general, lack of incentives to control costs, especially of inappropriate and unnecessary care. The Medicare crisis dwarfs that of Social Security.

As Rowley indicates, this requires us to improve the system by addressing these challenges without preconceived notions, There will be continuing struggle between our expectations and our abilities to pay for them, while overcoming the inertia of those who have vested interests in the current non-system of medical care.

CHARACTERISTICS OF A NEW HEALTH SYSTEM

In closing, Rowley asks the question "what do we want in health care?" and answers that we don't really know. We certainly have to answer questions about the value of spending $20,000 per month on drugs that may extend life for only a few months. Furthermore, an entitlement mentality is no longer sustainable. We must begin to understand how to address the need for balancing the many conflicting factors - economic, political, social, moral - involved in creating and sharing in a healthy society.

Q&A, AND COMMENTS (as best captured)

Q: *What will be the next cause of mortality after cancer and cardiovascular disease are largely eliminated?*
A: Among other things, organs and other parts will just wear out. In the old days, health declined rather linearly with age, and disabilities increased progressively with age. Now, on the average, the decline of health with age is relatively minor at first, but this near-plateau is followed by a precipitous drop.

Q: *In light of the points that you presented this evening and the higher longevity rates in Europe relative to the US, is there any possibility that people here will see the light and adopt the more balanced, health-supporting lifestyles of Europe? Or, is it more likely that we are going to export our ways to them?*
A: There are cultural and societal differences. The US is a land of opportunity that historically has had unlimited resources. The US mindset is that in the US, there are opportunities to do well, but doing well is an individual responsibility and the government won't help you do well. In contrast, Europe is an old, established society with limited space, and there is a greater sense of solidarity. Nonetheless, Europe has healthcare problems, too. There may be a change here in the US as the baby boomers get older and there is more demand for healthcare for the elderly. In addition, there may be a realization that there is not enough money to do everything.

C: There is another cost to technology. Some technologies are worth almost nothing, but we don't test them for efficiency before we put billions of dollars into them. However, to put a new drug on the market, the only requirement is proof that it beats a placebo statistically.
C: There is a trend toward having one's x-rays interpreted in India, in using pharmaceuticals manufactured in Ireland, and even having surgery in India or Thailand for 25% of the cost in the US. Some things may be cheaper overseas, but then there is the issue of insurance coverage. The world is becoming global, with outsourcing and teleconferencing.
C: There is a global search for value. For example, suppose Wal-Mart buys its pharmaceuticals from India because they are cheaper, assuming that they are of the same quality. Wal-Mart has gained considerable control over its suppliers.

*[Points for consideration: According to the **Pocket World in Figures, 2005 Edition,** published by **The Economist**, the US has the highest health spending as a percent of GDP (p. 84) and yet ranks only 37th in highest life expectancy (p. 78). What are possible reasons for this discrepancy? Send your comments to futuretakes@cs.com.]*

Next Time, the Planes Might Not Need Pilots ...

Emerging Weapon of Mass Destruction Technologies: *Impact on US Security*

Synopsis of the September 2004 chapter dinner program presented by Forrest Waller; summarized by Dave Stein [Note: Since **Future Takes** *does not wish to publish information that can be used for malevolent purposes, certain details are omitted from this summary.]*

The September 2004 program, presented by Forrest Waller, focused on emerging technology developments that have the potential to create "new kinds" of weapons of mass destruction (WMD) as well as disruptive military technologies. Mr. Waller explained upcoming changes in information technologies, biological technologies, nanoscale technologies, and advanced energy sources and materials. In each of these areas, he finds the potential for improved WMD and/or enablers of new WMDs. Assuring the attendees that his objective was not to sound like a Luddite, Mr. Waller emphasized that scientific research can create WMD by accident as well as by design.

THE METHODOLOGY

The presentation was based largely on a study that consisted of a survey of technical data that might enable new kinds of WMD and/or disruptive military technology, followed by an assessment of the possible impacts on national security. The research also included technology forecasts, at least one of which had a business orientation, as well as interviews of subject matter experts with particular attention to their points of consensus. Because of their role in recommending financial investments, even senior economists in financial institutions were interviewed. One challenge in the study was distinguishing between science fact and science fiction - a distinction that is sometimes blurred.

THE TECHNOLOGIES AND THEIR POTENTIAL IMPACTS

Four major technology areas were identified in the study - information technology (IT), biotechnology including genome-based technology, micro- and nanotechnology, and advanced energy sources. Mr. Waller discussed possible malevolent as well as benign applications of these technologies, singly as well as in combination. For example, biotechnology offers the promise of replacement organs, improved immunity, and perhaps someday even human-directed evolution. However, as Mr. Waller was quick to point out, this same technology that does good things can be harnessed to do bad things, such as create new diseases and disorders that target humans, animals, or crops. For all of their promise of abundant, cheap energy, the advanced energy sources can also be perverted for destructive use.

In the case of IT, Mr. Waller noted some differences. For example, IT can connect with a large number of people and can be a WMD enabler, but its effects are primarily disruptive and do not normally result in mega-deaths or major property damage. While cyber attacks against utilities, telecommunication systems, transportation systems, and financial networks can be massively disruptive, mass casualties would have a low likelihood. Even so, such disruption would undermine a nation's economic prosperity and public confidence in the government's ability to ensure safety and security. In the out years, however, IT (with AI) can conceivably create smart robots that can cause death and destruction on a wider scale.

OUTLOOK - "GOOD GUYS" VS. "BAD GUYS"

Mr. Waller noted several challenges that lay ahead. He envisions that at least the technology for powerful new WMD and disruptive technologies are likely to appear, and some technologies may first appear in other parts of the world. This is because the competition is keen. The R&D in these four technologies is being conducted in several countries, and there is no guarantee that the next breakthrough will be by "good guys." To compound the problem (from the US standpoint), the US educates much of its competition, and policy decisions that limit research or research funding (e.g., for stem cell research) also have their impacts. A related concern is whether all countries that deploy these technologies will rely on a human-in-the-loop to make life-and-death decisions in combat or whether some will relegate such decisions to AI.

A second challenge is that some new technologies and developments are not covered by international law or other existing proliferation constraints, especially in the cases of innovations that cannot readily be characterized as pathogens, chemicals, or fissile materials.

Then there is the challenge of defining WMD, since as Mr. Waller pointed out, recent events demonstrate inconsistencies. The present definition includes weapons that are not massively destructive while also excluding other weapons that are. For example, the 9/11 terrorist attacks resulted in just under 2,900 deaths at New York City's World Trade Center, but they did not result in the megadeaths that are commonly associated with WMD. The post-9/11 anthrax attacks, while massively disruptive, resulted in few deaths, and yet anthrax is considered a WMD. Conversely, the car bomb used against the Murrah Building in Oklahoma City resulted in 286 deaths and substantial damage, and yet a car bomb is not normally regarded as a WMD. According to Mr. Waller, rede-

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Beyond Oil?

THE GREAT *ENERGY* TRANSITION

Synopsis of the November 18, 2004 dinner program presented by Robert L. Olson; summarized by Dave Stein

Energy transitions are a central factor in the evolution of civilization, noted Mr. Olson at the start of his presentation to the chapter at its November 2004 dinner program. For example, the invention of agriculture was essentially an innovation in capturing solar energy and storing it in caloric form. With agriculture came crop rotation systems, waterwheels, and windmills. A related development was animal husbandry, which enabled the supplementation of human muscle power with animal muscle power as an energy source. This was the first quantum leap in social evolution.

WAVING ALONG

This so-called first wave was followed by the second wave, the age of fossil fuels and industrialization, continued Olson. The coal-driven industrial revolution produced a revolution in productivity. As Buckminster Fuller said, it gave every individual a hundred "energy slaves." This period saw the perfection of the steam engine and the invention of machine tools, which make tools for mass production. Initially the dominant energy source, coal gave way to the oil age of the 20th century, which brought unprecedented mobility, both locally and across the globe.

Noting Kenneth Bolding's studies of economies as well as human progression from the hunter-gatherer age to the agricultural age and then to the industrial age, Olson posed the question, "What's next?" However, he was quick to point out that this is not just an academic question, since the long term prognosis for oil availability is bleak, belying the general downward trend in oil prices between 1996 and 1999. Said Olson, oil now provides 96% of the energy for mobility - even the attendees' automobile and Metro rail transportation to his presentation - and that the dinner served there was cooked with petroleum-generated power! However, this cannot continue indefinitely, and oil supply depletion will force the third wave, a shift to eternal sources of energy such as solar and wind power.

On the need for this transition, the pessimists and optimists cited by Olson were not far apart, in relative terms. For example, John F. Bookout, then-president of Shell USA, predicted that US oil production would peak in 1970. Others contend that oil discovery peaked in the 1960s, and while the oil from newly discovered fields adds approximately six billion barrels per year, the current consumption is 26 billion barrels annually, with China and India now becoming major consumers. A somewhat more optimistic prediction suggests that production of oil will peak in 2015 and in 2050 for all underground fossil fuels combined - oil, gas, coal, plus additional oil that is obtained from tar sand and shale via advanced processing techniques. Olson suggested that US oil production has already peaked, soon to be followed by peaks in European oil production and then in oil production from Russia. The most optimistic oil production forecasts cited were those by the US Department of Energy Information Administration and the International Energy Agency, which show a peak between 2025 and 2035. Still other forecasts placed the peak at 2004-2006, 2010, and 2015-2025. Said Olson, the differences among the most optimistic and the most pessimistic predictions are a mere tick in the second hand of history. Furthermore, there is the additional sobering thought is that perhaps some of the oil reserves in other parts of the world are not really there, since in Olson's view, at least one country is not telling us much.

THE CALL TO SCENARIO THINKING

On one point, according to Olson, nearly everyone agrees. Another great energy transition - beyond oil - must occur over the generations just ahead. Global oil demand will exceed global production of oil. Citing several book titles that suggest an eventual doomsday scenario - e.g., **Power Down, The End of Suburbia, The End of Oil, The Party's Over** - Olson noted that in the recent US Presidential campaign, neither candidate really addressed the issue.

If the "peak oil" pessimists are right, the economic and social consequences are going to be colossal, perhaps with implications to civilization itself, and it is necessary to begin thinking about how to adapt, said Olson. Among other consequences would be an exacerbation of tensions between haves and have-nots. The challenge would be how to manage the decline, since production could drop by 50% within ten years after peak production. However, even if the optimists are right, there is little reprieve. There may be just enough time to make a smooth transition to a new energy regime, if we act now with urgency and foresight.

INTERSECTION - OIL AVAILABILITY AND CLIMATE CHANGE

Intersecting the oil peak problem is the issue of global warming. The global average temperature is rising. According to Olson, this climate change may make it impossible for half of all land in the US to support the plants and animals that live there now. Other parts of the world may be impacted even more. For example, the rising ocean may submerge half of Bangladesh. Even the ocean conveyor may shut down. Presently, the Gulf stream brings warm water alongside the European coast - but paradoxically,

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Energy

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if enough ice melts, the resulting change in salinity may shut down the pump, thereby precipitating an ice age, at least in Europe. Any of these changes would have profound geostrategic implications for national security. Olson even noted that the US Navy is conducting a study of new port opportunities that may result from global warming.

Olson was quick to caveat that there are uncertainties regarding climate change forecasts similar to those in the oil availability forecasts. In addition, he stated the need to determine the extent to which global warming is a consequence of fossil fuel use.

THE OIL PARADIGM AND RESULTING CHALLENGES

As Olson explained, the dependence on oil has pervasive consequences. The concentration of oil supplies in the volatile Middle East drives national security interests, which in turn drives military costs. This is a region rife with growing anti-US sentiment, and the distribution network - terminals, ports, and pipelines - is vulnerable to terrorists. In turn, oil price volatility leads to price shocks.

To compound the problem, as Olson noted, oil is the biggest part of the trade deficit, which in turn weakens the dollar. Furthermore, the need to protect US strategic interests often results in support of corrupt regimes and concentration of wealth, which in turn leads to extremism - and this is before environmental impacts (above and beyond climate change) are considered. Additional challenges include tensions between the US and poorer nations and the prospect of an eventual conflict with China.

CALLING ALL FUTURISTS!

The problem is there is no single, clear "optimum solution" on the horizon for replacing oil and limiting greenhouse gas emissions. Instead, there are a lot of competing "partial solutions," and little effort is going into developing new energy solutions. One of the greatest contributions futurists can make is to call attention to the urgency of the Great Energy Transition and to help project and evaluate alternative transition paths into the energy future. As Olson suggested, this would include developing contingency plans for a "power down," just in case the pessimists are right. Wargames and scenarios can provide useful insights on how to maintain critical functions, protect the economy, and reduce hardships. The studies need to consider all possible ways forward including new energy sources, reduced need for transportation, increased efficiency of all energy-consuming technologies, and assistance to developing nations in making the necessary transitions.

Beyond that, futurists can help manage change. Drawing upon Margaret Mead's studies of societies that faced rapid change, in some cases from the stone age to the space age, Olson noted that the pace of change caused many cultures throughout history to disappear but that some survived and flourished nonetheless.

LOW HANGING FRUIT - A COOL IDEA!

A key point of Olson's presentation was his contention that energy efficiency improvements can have high payoff. He noted that in 1973, refrigerators used approximately 1800 kilowatt-hours of electricity per year, in contrast with new refrigerators today, which use only 500 kilowatt-hours per year. As more older refrigerators are replaced by new ones, the resulting savings in energy will be equivalent to the output of 40 power plants, each of 1,000 megawatt capacity, said Olson. A more comprehensive view notes that by 2000, improved energy efficiency was already providing 40% of all US energy needs. As Olson noted, this is equivalent to five times the domestic oil production, three times the total US oil imports, and 13 times the US imports from the Persian Gulf. However, he quickly followed that not too many people know this, since it doesn't draw attention to itself.

Olson also suggested that we have not yet picked all of the "low hanging fruit." For example, new US cars average 24 miles per gallon, a 25 year low. Relatively mundane technologies such as hybrid card, ultralight hybrids, advanced carbon composites, and advanced on-board computing systems can increase the miles per gallon substantially, perhaps to more than 100 mpg as some envision for cars of the future. It is believed that hydrogen fuel cell vehicles will be twice as efficient as internal combustion engines. Furthermore, the new advanced composites, although lighter, may be safer in crashes.

Similarly, improvements in commercial lighting will result in an additional equivalent savings, even if residential lighting is unchanged. This can be achieved with high efficiency fluorescent bulbs and high-efficiency ballast transformers. Saved oil is cheaper than produced oil, said Olson.

GETTING OFF THE MERRY-GO-ROUND

Even so, other sources of energy are needed, particularly in light of the fossil fuel "vicious circle" that Olson explained. Fossil fuels create carbon dioxide emissions, which result in a greenhouse effect. The greenhouse effect, in turn, leads to global warming, which increases the demand for air conditioning and thus for energy - which in turn leads to the burning of more fossil fuels!

For alternative energy sources, Olson mentioned several possibilities ranging from "mild" to "wild" - from natural gas, clean coal, oil shale, and tar sand to hydrogen, and from hydroelectric, wind, geothermal, solar, and ocean tide power to biomass, cold fusion, and zero point energy. Among these possibilities, those that have already been proven are not without their own problems. For example, clean coal presents the challenge of sequestering the carbon dioxide. It may therefore be useful in a transitional sense, said Olson, but it is not good for the long term.

Another possibility is the pebble

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bed modular reactor. This reactor makes smaller nuclear plants possible, which in turn requires less of an upfront capital investment than is needed for traditional nuclear plants, which are no longer being built in the US anyway. The technology is encapsulation of the uranium into spheres the size of tennis balls. When these spherical capsules are brought together, they produce heat, but they never get sufficiently close to melt down. Furthermore, they are pre-sealed, and harder for terrorists to get to. However, they still require uranium enrichment, so there are still proliferation and protection issues involved.

USING IT OVER AND OVER AGAIN

Now turning to renewable energy sources, Olson emphasized their lower social, environmental, and health costs. They produce little or no greenhouse gas emissions, are less vulnerable to terrorist attacks, do not lend themselves to being weaponized, and avoid the fuel costs and the risks associated with fluctuations in fuel prices. Additionally, they are good for rural development, involve low transportation hazards, and are modular, thereby permitting modular investment in power plants and lines. Olson also noted that renewable energy sources provide more jobs per unit of capacity and that the total investment in these technologies in 2003 was more than $20 billion.

Regarding specific technologies, Olson noted that both wind energy and photovoltaic energy are possible. At the same time, biofuels have not seen as much growth as other areas. Referring to an article in the July-August 2003 issue of ***The Futurist***, Olson indicated that in his view, hydrogen technologies - ranging from photoelectrochemical based water splitting to biodisassemblers and genetically engineered bacteria and algae - are being over-hyped.

THINKING SMALL, ONCE AGAIN

Olson commented on the possible application of nanotechnologies to energy needs. One possibility is nanorod solar cells made of conductive polymers with nanoscale semiconducting crystals. These crystals increase the surface area by a factor of more than 100. Additional applications include nanomaterial-based fuel cell membranes, advanced hydrogen absorbants, lightweight tanks for hydrogen storage, and even nanobatteries that store more electricity and have rapid recharge capability.

SO, STAY HOME!

Turning his attention to another frontier, Olson noted that advanced telecommunications, made possible by broadband technology, can reduce the need for travel and already has. At the same time, he proposed that maybe the full potential of advanced telecommunications has not been reached, because the energy pinch is not yet sufficiently painful.

Additional possibilities to reduce the need for travel include smart growth - sustainable cities (themselves concentrations of people) and higher population densities in the suburbs.

THE GREAT DEBATE OF THE '70s (during the early days of the WFS) - REPLAYED!

Looking back (and in a sense, ahead) to the great debate of the '70s, Olson characterized it as binary. During these early days of the World Future Society, the issues were continued growth vs. limits to growth, the super industrial society vs. "small is beautiful," and the trickle-down economy vs. the community economy. Not surprisingly, one side favored large scale, complex, high technology whereas the other side favored small scale "appropriate technology." This debate entailed twin risks, noted Olson - either that a collective loss of nerve might result if the prophets of doom held sway, or that overshoot and collapse might occur if the uncritical optimists prevailed.

Continuing, Olson suggested that an even bigger challenge might result from remaining in an obsolete polarization. He stressed the need for investment in the great transition, for reducing waste in consumption, and for cooperative global sustainable development and prosperity, coupled with social equity and harmony with nature.

Q&A (as best captured)

Q: *To what extent have the more radical wings of environmental groups inhibited the move to a sustainable future?*
A: The environmental movement has largely shifted away from confrontation. When the environmental groups started, there was substantial chemical pollution, and this led to confrontation, but now more of the environmentalists have a cooperative spirit.

Q: *What is being looked at on the demand side? What do we consider a materially good life?*
A: This was not looked at in the present study, but it is worth investigation. You (this WFS chapter) has a specific program coming up on redefining progress. In any event, the government is not likely to mandate anything. The change will come from the grassroots, perhaps with religious institutions playing a role. In fact, this question is part of the basis for the critique that we get from much of the Islamic world. From their perspective, we made the mistake of defining happiness in terms of material affluence and envy. It is possible that a future way of life will be more community centered.

Q: *Can a shift to alternate energy, come as a result primarily of private sector investment, without assistance from government?*
A: I don't have an answer. The process is very capital intensive, but there exists a lot of capital. To make the shift happen, the market is essential.

Q: *What about geothermal energy?*
A: Geothermal energy makes sense in some places, such as Iceland.

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Q: *When you discussed energy efficiency, it was per unit of energy. However, we have a growing economy - for example, a growth in the number of refrigerators. Even with improved efficiency, how can we continue meeting the energy demand if the population is growing?*

A: You are ultimately right. The total energy demand is the energy demand per person multiplied by the population, so everything contributes. At the same time, some demand is self-limiting. For example, there can be only so many refrigerators. If you reduce the energy needed to create a unit of GDP, then you can have economic growth concurrent with reduced energy consumption.

END OF PROGRAM

The participants said their goodbyes and proceeded home, perhaps now more appreciative of the energy that brought them to the presentation and cooked their food. Perhaps the "far-out futurists" among them can find solace in data suggesting that in geological timeframes (10,000 to 50,000 years), the Earth is cooling!

[Points for consideration: How will a new or renewable abundant energy source change the geostrategic interests of the US and other industrialized nations? What will be the next living and working patterns after telecommuting, and how will they change the energy needs of industrialized nations? As the speaker stated, India and China are becoming major consumers of energy resources. What are the other geostrategic implications of growing middle classes? Special question for geophysicists and climatologists: If global warming results in a partial or complete shutdown of the thermohaline conveyor, paradoxically resulting in an ice age, will the net result be a rise or a fall in ocean levels? Send your comments to futuretakes@cs.com.]

Emerging Weapon

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finition of "WMD" will raise fundamental national security policy issues for the US as well as for the international community.

A fourth challenge is international political control. Mr. Waller sees greater control over the most promising new technologies as inevitable. For example, a European Parliament committee recommends banning electromagnetic weapons as well as any weapons that create superfluous injury or unnecessary suffering. Various non-governmental organizations (NGOs) want political control over weapons that can destroy the environment, especially "leave behind" weapons such as land minds, which generally outlive the hostilities that placed them. For their part, genetically altered materials present their own legal challenges. Yet, the study uncovered recurrent and in some cases contradictory themes regarding political control - that it is undesired, unacceptable, ineffective, unneeded, or too late.

Still another challenge is the scientific controversy on the various technologies and the possibility of exaggerated claims, particularly regarding how achievable they are and how effective they will be.

Finally, it was noted that while the technology revolutions will improve military capabilities in key mission areas, new kinds of WMD and disruptive technologies can negate security expectations. In addition, they create new challenges in surveillance, warning, and damage assessment.

AFTER THE PROGRAM

As the attendees said their goodbyes and began their treks home, perhaps at least some of them were thankful for what we don't have yet - futurists though they may be!

Future Fund

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Adopt a Class Program

This package is designed to be used in a class of about 25-30 students at the secondary level. It will include a teacher's guide, copies of ***Futuring: The Exploration of the Future*** and access to a resource web site.

Chat Room for Educators

This is also part of our strategic alliance with Global School Net, an international non-profit which provides training and tools for teachers and students. They are working with WFS to provide future-related materials to the teachers in their network.

In addition, WFS is working with several potential partners to explore programs such as a "Discovery Team" approach allowing high school students to develop solutions to compelling technology challenges now facing modern society, such as breakthrough energy storage technologies. The goal is to energize youth by opening up and 'democratizing' the process of scientific innovation.

These are some of the highlights of our education-related programs for the year. We invite your participation, feedback and even financial support and look forward to working with a range of interested partners in this important and fascinating area. If you would like to discuss these programs in more detail, contact me at tmack@wfs.org or 301-656-8274.

Futurist Link *of the Quarter*

http://www.aacc.edu/future

This link connects you with the Institute for the Future at the Anne Arundel Community College, Maryland, USA

Who is your favorite futurist?
Please nominate for this column.

Creating Future

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from there and declare what I see, despite there being no evidence that what I declare is achievable. Consider, for example, when John F. Kennedy declared "we will put a man on the moon in a decade!" His advisors were reportedly aghast, claiming there was no way to fulfill on that promise. By declaring an (apparently impossible) future event taking place, seven years from 1963, John F. Kennedy called forth a set of actions in the present that would deliver that future. We did put a man on the moon in a decade, against all the odds of reasonable people. George Bernard Shaw once said that all progress depends on the unreasonable man. This article is about being unreasonable, about declaring a certain kind of future, just because we can. And in the process, creating new possibilities that would otherwise never have happened.

So how does one go about declaring a different kind of future and then causing it into being? First of all, by making a promise.[3] In fact, if we look at those leaders who did that - Gandhi, Mandela, Mother Teresa, Kennedy, Martin Luther King Jr. - we see people who have made a big promise and lived their lives in the fulfillment of that promise. This technology of making a big promise and then organizing our lives to fulfill on that promise is available to all of us. And it's fundamentally unreasonable. It always disturbs the status quo, makes people edgy, uncomfortable, and, sometimes, threatened. In his book, ***Leadership Without Easy Answers***, Ron Heifetz of Harvard analyzes the fundamentally upsetting nature of moving into unmarked terrain.[4]

The other thing that is required in declaring a promise and then causing it into being is community. I can promise all I want. Unless I get others to join me in that promise, the promise will die. I think that is what Margaret Mead, the famous anthropologist meant, when she asked us never to doubt the power of a handful of highly committed people. Indeed, she said, that is the only thing that has ever changed the world. That tiny handful is the beginning of a community. And, if the promise is one that inspires or calls to the longing of others, they will step into it and enlarge the community until it becomes a movement, then the new way of doing things, and then, just "business as usual."

My promise

As a background for what the rest of this article is about I would like to share something very personal. Many years ago I had a near death experience, and with that the experience of being asked by our Maker to go back. I was told - without words - that there was something it wanted me to do. Since then I've lived my life in the question of what am I supposed to do? That question led me to Harvard's Kennedy School of Government, my work in international development, and, among other things, in 1995 to being asked by USAID to go around the world and find out what works and what does not work well in how countries prepare a skilled, competitive workforce (so they can participate in the global economy).

if we look at those leaders who did that - Gandhi, Mandela, Mother Teresa, Kennedy, Martin Luther King Jr. - we see people who have made a big promise and lived their lives in the fulfillment of that promise.

That experience changed my life. In country after country I met dozens, sometimes hundreds of young people who shared their hopes for a better future and their despair at ever being able to grasp it. In Lima, in Honduras, in South Africa, in Ghana, Senegal, Philippines, the poor parts of India, Eastern Europe, Russia. When I returned, I asked my team to look into the numbers. The numbers confirmed what the young people had told me: by 2012 - 2015, there will be approximately 1.184 billion 20 - 29 year olds on the planet. Fewer than ten percent of them will live in countries where there are good jobs for them, jobs that allow them to sustain themselves, their families, their communities (through tax revenues), and their environments. Those young people gave me my promise. I believe it's worth the gift of a second chance with my life.

My promise

My promise is that by 2020, each and every person on our planet sustains themselves, their communities and their environments. This promise means that everyone needs to have a good source of livelihood, that they earn enough to give to their community in the form of taxes (to pay for education and other public goods), and do so while sustaining their environments. I am choosing to live my life out of that promise - the journey is unbelievably exciting! This promise structures my actions, the things I do and the things I don't do. Just in case you are tempted to think I'm a truly "good" person, I'm not. In addition to my spiritual reasons, I have chosen to live inside this promise because it provides a more interesting and productive life. And, by sharing my promise with you, perhaps you too will be inspired to create your own promise and a life that you love. Or join my promise!

In this article I'll share with you how "my" promise is getting fulfilled, how a handful of people in Washington and in different parts of the world are working together to design a different future from the likely one that will happen if we do nothing. And how my promise has been fostered and grown at my workplace, RTI International, and with leaders such as Stuart Hart at the Johnson School of Business in Cornell and C.K. Prahalad at the University of Michigan, the World Resources Institute, and others.

Background

Youth populations in many developing countries, including the Middle

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East, exceed 55 percent.[5] The economies of their countries cannot grow fast enough to absorb that growth. Unless we act quickly, the problems of joblessness and the lack of sustainable livelihoods will continue to have major consequences for world poverty and for international political, social, and economic stability.

This demographic wave is occurring at a time when the world's multinational corporations (MNCs) have begun to saturate their first world markets but lack the knowledge and relationships to grow the economies and capture the buying power and consumer demand that exist at the base of the world's economic pyramid (BOP). Traditional business strategies have had little success in tapping into the estimated $13 trillion BOP market potential. A select number of MNCs are choosing to learn from these failed attempts and are exploring innovative business partnerships and strategies that might allow them to participate proactively in these markets.

Over the past 50 years, the world's donor institutions (World Bank, bilateral agencies such as USAID, and regional development banks) have spent close to 60 billion to help poor countries improve their condition. While there have been some gains, it has become clear that donor organizations cannot grow jobs, economies, or innovation in poor countries. It is not that they haven't tried. They have, or think they have. However, they are hobbled by the need to be reasonable, to work within the box of known solutions and existing models.

Looking for a breakthrough

Our team realized that to find a breakthrough in the area of job and market creation, we would have to be willing to **Design from the Future**. Most development initiatives refer to the present and past to design future approaches. Our approach creates the future from the future: we stand in the future and create from there. We are asking the question, "If by 2020 everyone had a livelihood that sustained them, their communities, and their environments, what would have had to happen back in the year 2005, 2006 and beyond?" Standing in the future looking backward to the present, our team realized that it was private enterprise that grew economies and jobs and that growing better jobs requires innovation, new technologies and new business models that support sustained productivity changes and improved opportunities for workers in the world's poor countries. How would such growth have been catalyzed? The multinational corporations of the world would have begun to see that the poor represent an exploding market for products and services they need to make their lives better. They would also have seen that, instead of using the poor to produce goods to be sold in rich countries, they could partner with the poor to invent new products and services in ways that build wealth for and with the poor, while building new markets and new business partners for the corporations. That by serving the poor, they would be able to sustain the kind of double digit growth they experienced in the 1990s. This has recently been captured in a groundbreaking new book by C.K. Prahalad, ***The Fortune at the Bottom of the Pyramid - Enabling Dignity and Choice Through Markets***.[6]

Standing in the future looking backward to the present, our team realized that it was private enterprise that grew economies and jobs and that growing better jobs requires innovation, new technologies and new business models that support sustained productivity changes and improved opportunities for workers in the world's poor countries.

Standing in the future we recognized another important design principle, "partnership." We saw that people in most multinationals did not know how to work with the poor. Our experience in international development taught us that NGO's, women's groups, and local leaders in economic development had that knowledge. We began looking for examples and found these in early trial reports by HP and other companies[7] described in earlier articles by Stuart Hart[8] and Prahalad.

What grows economies and jobs? Business. Private enterprise. Businesses, especially MNCs, are key players in growing economies. They know that the future growth of their business depends on the emerging markets of the world - the 4 billion consumers they have not been able to reach. However, they cannot reach these consumers unless, at the same time, they partner with them to build their wealth. How? Through joint venturing with entrepreneurs in poor countries, inventing new products, services and markets that haven't yet been imagined. This will, if done well, lead to the creation of new jobs, new livelihoods that are sustainable.

While it is not the job of business to help reform countries, their commitment to develop innovative products and services for the BOP can catalyze the development of more enabling environments (transparency, education and skill development, better governance, etc.) that help emerging markets sustain economic growth over time. Using the lens of learning and innovation, my team at RTI is brokering a series of partnerships to connect (1) the world's leading MNCs seeking to grow new markets at the BOP; (2) local business, government, and economic development leaders in emerging markets; and (3) donor organizations interested in economic and job growth. These learning partnerships will be guided by a new model for growing markets, jobs, and prosperity. Specifically, we're creating a space for

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innovation to occur by selecting pilot sites where traditional business models and research and development approaches will not work. As MNC and local business leaders generate ideas for innovative products and services, the Learning States team brings in local stakeholder groups, such as educators, policymakers, and government officials, as well as entrepreneurs and business leaders who are committed to supporting these initiatives and creating new value in emerging markets. Interestingly, that is exactly how RTI and North Carolina's Research Triangle Park were formed. Industry, government and university leaders banded together to create RTP and RTI to keep the state's brightest students from leaving North Carolina to look for jobs elsewhere.

Approach

There are many models for effective, local economic development. RTI's approach is innovative because it integrates BOP best practices across a number of traditionally isolated sectors, such as governance, education, and business, aligning actions to result in the creation of markets and jobs. RTI's approach is built on learning networks - sharing knowledge and experience with non-competing businesses and countries that have experience addressing similar problems and learning from one another. Learning States takes seriously the need to break out of the economic silos and institutional isolation that too often prevent collaboration toward breakthrough ideas and innovations.

Strategy

We're developing Global and Local Academies that bring people in multinational corporations together with local stakeholders through a series of learning experiences that will result in mutual benefit. Do we know exactly how this will work and what specific opportunities will emerge? Of course not. RTI is learning as well. RTI is creating a global academy composed of and supported by several sets of approximately 10 non-competing MNCs, each focused on opportunities in specific places, along with input from universities and other institutions, international donor organizations, and world experts on BOP strategies. By participating in project activities, members of the global academy will learn how to create new markets, products, and services for emerging market consumers. RTI will also form local academies in emerging market locations. Local academies will comprise leaders in business, community, economic development, and government who are committed to growing their local economies, jobs, and enterprises. RTI will team global academy members with local academies and facilitate collaborations and learning, both in emerging market sites and on-line.

Learning, Innovation, and Networks

Evidence shows that successful development in poor communities is tied to innovation, and innovation is tied to learning how to turn knowledge, relationships, and local understanding into effective business strategies, products, services, and delivery systems. While some MNCs have begun to forge new economic opportunities in emerging markets, most companies have approached these markets on an individual basis, not as a group of non-competing investors, learning from each other and with their local partners. By collaborating with other global and local academy members, MNCs will learn together how to create new markets, business models, and products and services for emerging market consumers.

The vehicle for face-to-face and virtual interactions in each pilot site is the knowledge hub. The knowledge hub is the heart of the Learning States initiative, and the design and proper functioning of the hub is critical to the success of Learning States. The knowledge hub is the physical and virtual "home" where members of the local academy collaborate with each other, stakeholders in the emerging markets, other international knowledge hubs, and the global academy.

Timeframe

RTI plans to begin with one US and one international pilot site location in 2005, followed by a second international site in 2006. International sites will be selected in partnership with global academy members, who will attend a kickoff meeting at RTI's North Carolina campus in March 2005. International pilot sites will likely be located in countries that serve as platforms for big markets, such as China, Southeast Asia, Arabic-speaking countries, Latin America, Eastern Europe, and others. So far, we have the commitment of eight of the world's leading multinational corporations to join us, creating our first Global Academy. Two other major corporations are waiting to join the second Global Academy, as we will put only ten non-competing corporations into a consortium.

Vision

We are committed to an unreasonable vision. There is a long way to go, but we know that all journeys begin with the first steps, which we are taking now. We invite you to join us!

An expert in how countries can develop a skilled workforce for participation in the global economy, Monika Kosmahl Aring is a graduate of Harvard University's JFK School of Government and has participated in Harvard Business School's Executive Development Program. Ms Aring is a senior analyst of workforce policy at RTI International. There she is leading the economic and workforce development team, developing innovative approaches to job and market creation, economic and workforce development.

In 2001, while at EDC in Boston, she led the technical team to win a $35 million contract for global workforce development from the US Agency for International Development (USAID). Aring now serves as senior consultant to this project. At EDC, she also founded the Center for Workforce Development, raising over $10 million

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Future *Lite* area 51

By Lindan Johnson
lindanlee@hotmail.com

Welcome to Area 51 where we concern ourselves with future-lite. No topic is to small, no trivia too trivial, and no fact too unfounded if it can possibly provide entertainment or enlightenment for our readers.

Domestic Engineering

We live in a world of complex adaptive systems, where interactive networks of checks and balances seamlessly weave together to embrace paradoxes like how one person will be charged a very large fee if she even ***thinks*** about overdrawing her personal account by one copper penny but her government can keep writing checks and be **TRILLIONS OF DOLLARS** in debt and it doesn't even get a stern form letter from the bank.

So I ask you, considering these factors, do we really want to bring appliances that are smarter than we are into our homes?

For the record, I'm quite fond of technology and a card-carrying early adapter. I was the first person on my cul de sac to pay the gross national product of Luxembourg for a front-loading washer and dryer and it was darn well worth it.

My washer has cycles to clean dirt that hasn't even been invented yet. It has a security clearance far higher than anything known to the Homeland Defense Agency that allows it to negotiate with the dryer so that it only takes 8 hours of energy-saving heat to dry my four bath towels properly. Did I mention that these two machines sit up on pedestals and have shiny stainless steel drums, the Midnight Black enamel finish and the gleaming chrome accents that transform my laundry room into a veritable gallery of modern art?

This set came with a thousand-page manual written in Esperanto, accompanied with graphic images in Babylonian hieroglyphics. After I struggled through guessing what the first couple of hundred pages might mean and then tossed it and figured out where the "on/off" switches were and how to add the **High Efficiency Detergent** *(translation: Really Really Expensive Soap)*, I stopped worrying.

I'm not an alarmist or a conspiracy theorist… well; I do have my suspicions about the likelihood of my washer, dryer, toaster, refrigerator, vacuum cleaner and scale all needing to be replaced within a 30-day time frame. This alerted me to some alarming trends- mostly occurring in my main living areas- that I feel are evidence-based enough research to bring to your attention.

Last week, after the laundry was done, I saw my two cats sitting patiently in the stainless steel drum of the washing machine. They meowed twice and were gone - DISAPPEARED! Several hours later, I heard a noise in the laundry room and raced back to find them sitting in the dryer safe and sound. So I grabbed the manual and sure enough, on page 997 in a footnote it said:

May also be used as a domestic teleportation device for cats. Not approved for interplanetary travel.

So three days ago I was at Sears looking at their high-power vacuum cleaners that now come with actual motors in them instead of the self-propelled hamster wheel that my old cleaner had, and the machines now come in jazzy bright colors. I picked out the best model (I'm now also the first person on the cul de sac to own a teal blue vacuum cleaner with more power than all the leaf blowers on the block combined) and asked the Way Too Young Guy to Have Ever Vacuumed A Rug In His Life (W.T.Y.G.) what the difference was between this model and the next model up that cost a couple of mortgage payments more.

ME: Why is this model more expensive?
WTYG: Oh right, ah, it's because it has a **State-of-the-Art Dirt Sensor**.
ME: I don't see anything there.
WTYG: Oh, no man - you can't "see" it but you can watch this Dirt Sensor Indicator light right here and it will sense if there's dirt in the carpet.
ME: And then what will it do?
WTYG: Well, like, it sucks it all up.
ME: Like a vacuum cleaner?
WTYG: Exactly!
ME: Does it bag the specimens and send them off to The Sears Sanitation Lab, send me a report on the State of Microorganisms, and make arrests of the identified carpet-trackers as appropriate?
WTYG: Whoa - great idea for a TV show, lady!

Sadly, I did not make this conversation up. Really.

So this morning, I go into the kitchen, step on the new scale that tells not only my weight, my fat content, astrological forecast, but also the stock market and weather reports. **The red digital message area flashed "OVER GOVERNMENT STANDARDS".** I'm used to rejection, went to the new toaster and popped in an English muffin and the lever refused to go down. **The red digital message area flashed "CARB LOCK ENFORCED".** I immediately turned to the brand new refrigerator and was thinking about the fresh fruit torte that was leftover from last night's dinner party. Immediately I heard the sound of the refrigerator hermetically sealing itself and as hard as I pulled on the handle it would not open. **The red digital message area flashed "DRINK 8 GLASSES OF WATER AND HAVE A GOOD DAY."**

I am now holding every manual for every new appliance that I have purchased. I intend to climb inside the washing machine, next to the cats, and I'm going to find myself a nice quiet planet where I can have lunch and read every inch of fine print about

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News from the KOREA CHAPTER

By Youngsook Park
President, WFS Korea Chapter

The WFS Korea Chapter is in a period of dynamic growth! We opened our website, www.korea2050.net. A book, ***Future Report***, written by me, was published by Random House Joongang in December 2004, which is currently a best seller in the nation's big book stores. Ed Cornish's book ***Futuring*** was also translated and published on 12 February by Lee Young-tak, former minister of the Office for Government Policy Coordination, who was appointed as chairman of the new merged Korea Financial Exchange/ Stock Market launched in Busan in February 2005. In addition, we have completed translation of ***State of the Future*** written by Dr. Jerome Glenn, AC/UNU Millennium Project. ***Smart Mobs*** is also being looked at for translation along with several other books.

There is more good news. As the only future studies organization in Korea, Korea2050 is now recognized by the media. A radio program "Future Talks" was organized by the state-run Korea Broadcasting System (KBS Radio 1, the equivalent of the BBC in the UK), where I am inviting Korea's No1's in various sectors to talk about the future of the specific sectors. The radio program started in early January and will last for a year and is being aired at prime time on Saturdays from 1-2 pm when people travel listening to the radio programs in their cars. Koreans work until 12.30 pm on Saturdays, and that is the peak period of people traveling by cars.

I host the program inviting sector leaders and experts on demographics, governance, politics, automobile, electronics, communications, culture, stainable development, water, democratization, rich-poor gap, threats to health, energy, science and technology, global ethics etc. There will be some 28 items that we would cover within an hour program for a year. I am wondering how to split the sectors, but will focus on where Korea is good. This will help Korea 2050 to gather top experts in each sector for them to work on future studies. I have invited so far a few ministers, CEOs of the largest conglomerates such as Samsung and KEPCO and Korea Telecom to talk about their expertise and industries, which will later become our financial support groups. WFS has been introduced to our audience during my radio programs.

I am also organizing a Future Forum "SBS Digital Forum" as one of the advisers to SBS TV, a popular private terrestrial broadcasting station in Seoul from 18-20 May 2005, where famous and familiar futurists and CEOs to take part in various sessions. Speakers invited include Al Gore, Former Vice President of the United States; Tim Mack, President, World Future Society; Jerome C. Glenn, Director, Millennium Project of the American Council for the United Nations University; Frank Catanzaro, Chair, Cyber Futures, AC/UN University Millennium Project; Peter P. Yim, President & CEO, CIM Engineering, Inc., U.S.; Sarah McCue, Senior Partnership Advisor, World Bank Institute; and Jan Amkreutz, President, Digital Crossroads Consulting.

I will also be organizing another Future Forum in mid October called "World Knowledge Forum" financed by the Maeil Business News Daily and MBN TV in Seoul, where some of you who are interested in participating are invited. I will keep you informed on the October Future Forum to take place in Seoul in the near future.

News from the VENEZUELAN CHAPTER

By José Cordeiro
President, Venezuelan Chapter

The Venezuelan Chapter of the WFS sponsors a yearly nation-wide contest for university students, and the winners this year will get scholarships to go to Chicago WFS 2005. Details are available at http://www.futurovenezuela.org/concursos.htm.

We are also organizing, together with the non-profit World Transhumanist Association (www.transhumanism.org) and the Extropy Institute (www.extropy.org), the first international transhumanist conference in the developing world. For more information, visit http://www.transhumanismo.org/tv05/.

Details on additional past and future chapter events are available at http://www.futurovenezuela.org/eventos.htm.

Condolences

On behalf of the Editorial Board of ***Future Takes****, I extend our deepest condolences to those who lost loved ones as a result of the recent tragic tsunami in Asia. This news was saddening, but it has reminded us that we are one global family. May all who were personally touched by this tragedy find strength and peace.*

Dave Stein, Editor-in-Chief

Futurist Book Group

The Futurist Book Group meets the first Wednesday of every month at 7:30 pm. Meetings are at **Politics and Prose**, 5015 Connecticut Avenue NW, Washington DC. Politics and Prose gives a 20% discount on all Futurist Book Group selections if you mention the Futurist Book Group at the time of purchase.

Terrorism

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sion of technologies in the commercial sector which provide private citizens capabilities once limited to very advanced militaries (such as the ability to communicate covertly and to intercept non-encrypted communications; to navigate by satellite and see in the dark) are leveling the playing field against main force military units. If the problem of super dissatisfied groups who feel powerless or excessively aggrieved continues, then terrorism may be their continued route of choice. The chart of Significant Terrorist Incidents (1960-2003) indicates increases in number and geographical areas from year to year. The past is not necessarily prelude.

Nothing holds the three causes invariant over the next twenty to thirty years. The forces of explosion and implosion of nation states may be resolved. No nation remains without a peer forever. China may well be preparing to challenge the US on military as well as economic grounds. Other nations have proved equally adroit and soft power may soon trump the hard power of a military giant which has funding issues. On the other hand, the arms race between national militaries and commercially available technology has not been won - it has just started. And the nations may win - their motive isn't profit, it is survival. The vast majority of terrorists don't have the infrastructure to research, develop and produce their own weaponry - that's why they are terrorists. On the other hand, anti-terror is expensive and terror is cheap.

A dramatic change in the willingness of states/groups of states and of angry dissenters to solve their grievances peacefully, or a change in any of the three causes, may make terrorism not the wave of the future, but a trough of the past.

Tommy Osborne's biographical information was published in the Summer 2004 issue of **Future Takes**

[Points for consideration: Increased willingness for peaceful resolution of grievances - "constructive dialog" in the parlance of some - can indeed reduce the incidence of terrorism. Now, consider the grievances themselves. Should we expect more or fewer interest-based and/or value-based grievances - and more or fewer people who have these grievances? Furthermore, to what extent is counterterrorism a factor in our becoming a surveillance society? Is it the main driver in a "requirements-pull" sense, or is the surveillance society more a matter of "technology push"? Finally, does technology favor terrorism or counterterrorism? Send your comments to futuretakes@cs.com.]

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US National Capital Region Chapter

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SPONSORSHIP
vacant

International

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For 2005, WFS has resolved to substantially upgrade its Internet presence, with a new look and greater online capability, which will include more support for Society chapters and user-friendly communications and e-commerce features. The ultimate goal is to provide additional value to World Future Society members all over the globe. I am encouraged and energized by the possibilities that lie before us and hope you are as well. Please continue to talk to me about your ideas and hopes for the Society and tell me what we need to improve. We will go the farthest working together in partnership and I believe it will be a great year!

Tim Mack
Tmack@wfs.org

World Future Society US National Capital Region Chapter

Committee Descriptions

The World Future Society U.S. National Capital Region Chapter invites you to get involved. We have a number of different committees offering interesting ways to participate in building the Chapter. We look forward to having you on board!

Digital Media

The Digital Media Committee designs, develops and manages the Chapter website and all forms of digital communication.

Contact: Eric Garland 202-487-0092
eric-a_garland@yahoo.com
Carl Pinches 703-391-1213
cpinches@worldnett.att.net

Finance

The finance committee is responsible for the Chapter's financial well-being. It not only administers the funds for Chapter activities and growth but also plays an active role in the Chapter's program and development strategy process, being responsible for budgeting, event and dues pricing, and investing funds not required for near-term operations.

Contact: Ken Harris 301-657-3731
harriskw@erols.com

Future Takes (Chapter Newsletter)

Future Takes publishes thought-provoking articles, authored by Chapter members and nonmembers alike, on the future-related topics and on futurist methodologies. Reaching beyond our own ranks, we provide a platform for members of other professional societies who want to share their perspectives and insights on future-related aspects of their organizations' areas of interest. As an interdisciplinary, future studies related newsletter that serves several organizations, we provide authors with cross-organizational and cross-disciplinary exposure.

Contact: Dave Stein 202-452-5592
futuretakes@cs.com

Membership

The Membership Committee helps develop and maintain a strong membership community in the National Capital Region. We do this by identifying and welcoming prospective members and by reaching out to a wider range of individuals.

Contact: Sue Snyder 410-757-3752
redynss@comcast.net

Outreach

The Outreach Committee develops and maintains ties with other professional institutions, government agencies and organizations. These ties enable our Chapter to sponsor speakers and other programs of mutual interest, which in turn help Chapter members to deepen their understanding of particular aspects of the future. They likewise provide a futurist perspective to members of the other organizations.

Contact: Dave Stein 202-452-5592
futuretakes@cs.com

Program

The Program Committee plans and manages educational program for the Chapter. Responsibilities include speaker selection and outreach, program planning and event production.

Contact: Richard Smith 703-447-8784
rhsmith@nanoverse.net
Ken Harris (book club) 301-657-3731
harriskw@erols.com

Public Relations

The Public Relations Committee's mission is to publicize our Chapters events to the greater Washington, Northern Virginia and Eastern Maryland area. We seek to make our Chapter visible to the many audiences that can benefit from futurism in our community, and we invite their participation in Chapter events.

Contact: John Meagher 703-734-1454
jmeagher@intercet.com

Sponsorship

The Sponsorship Committee works with Outreach, Programs and Finance to find companies and organizations interested in collaborating in the production and funding of events produced by the Chapter.

Contact: Limor Schafman 703-205-0729
limors@keystonetechgroup.com

Creating Future

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over 11 years and co-founding a global summit on youth employment, recently held in Egypt. Prior to EDC, she co-directed business development for the American Leadership Forum, working with public and private sector leaders in major US cities to improve local governance. She has worked in over 28 countries on every continent; identifying best practice in private sector led workforce development systems. Her study, "Compass to Workforce Development" is used by world development organizations for training purposes.

Aring has led projects and public forums on workforce development and economic competitiveness for leaders in countries in Latin America, Africa, and Central Asia as well as the US and India. These forums generated a breakthrough level of participation, collaboration, and problem solving, allowing participants to discover where their underlying mental models hinder or enhance their effectiveness as leaders of their country's institutions.

An expert on public private partnerships in economic and workforce development, Aring has led several national skills standards projects in the US. She has led a number of study tours of US policymakers to Europe, where she was also a guest of the German Bundestag. She has been a keynote speaker for global forums, including ASEAN, the Swedish Defense Ministry, the French Government, and many other organizations. In the US she served as an Advisor to the Education Commission of the States, the National Association of Manufacturing, and to various other organizations. Her work has been featured in the ***International Herald Tribune****, National Public Radio, Phi Delta Kappa, and other media. She is listed in* ***Who's Who of American Women*** *and speaks five languages.*

For more info please contact maring@rti.org

[Points for consideration: To what extent will this innovative approach impact the Western business model? Will the corporations bring back lessons from the poor countries that they are helping? Conversely, will the poor countries become more Westernized, and if so, what are the implications? Send your comments to futuretakes@cs.com.]

1 *I gained this insight at a forum conducted by Landmark Education (www.landmarkeducation.com), arguably the world's leading training providers on how to transform everything.*
2 *Center for Constructive Change, University of New Hampshire, Durham, NH.*
3 *The technology of promising described in this article is taught at Landmark Education's Power and Contribution Course (www.landmarkeducation.com).*
4 *Ronald Heifetz.* ***Leadership Without Easy Answers*** *(Belknap/Harvard University Press, 1994)*
5 *Most of the Middle East, for example, is challenged with very high youth populations and too few jobs to absorb that growth.*
6 *C.K. Prahalad.* ***The Fortune at the Bottom of the Pyramid - Eradicating Poverty Through Profits.*** *Wharton School Publishing. 2005.*
7 *Debra Dunn and Keith Yamashita. Microcapitalism and the Megacorporation. HBR, 2003*
8 *Stuart L. Hart. "Beyond Greening: Strategies for a Sustainable World."* ***Harvard Business Review****, 1966*

Visiting Washington DC?

The WFS US National Capital Region Chapter invites you to visit us! Our schedule of dinner programs, luncheons, book discussion group meetings, workshops, and other chapter activities is available on our Web site: *www.natcapwfs.org*.

For information on other World Future Society chapters, visit *www.wfs.org*, then navigate to "chapters."

Leadership Opportunities - Have an Impact!

Help Shape the Discussion Space on Future-Related Issues, Worldwide

Do you feel marginalized at your day job? Is it not giving you opportunities to lead, create, make things happen, and have an impact? Are you trapped in day-to-day trivia and mundanity?

If so, then consider a volunteer position on the **Future Takes** Editorial Board. To meet the demands of our expanding scope of operations and our growing circulation, both to local professional societies and to other World Future Society chapters worldwide, we need additional editors, staff writers, and outreach officers.

Our only requirements for these positions are an interest in the future and in thinking "out-of-the-box," good writing and/or leadership skills, and an interest in promoting **Future Takes**. Being employed as a professional futurist is not a requirement, nor is prior editorial experience.

If you are interested, contact us at *futuretakes@cs.com*

Write on!
Lead on!

Thinking Outside the Box - A Practical Lesson

By Jay Herson

Thinking creatively and free of the constraints of the current structure is an essential requirement of all futurists. While we must take past and present trends into account we must restrain ourselves from considering only the most extrapolative scenarios. Still, on certain issues it is difficult to shed our red state / blue state upbringing, gender, ethnicity and religion. I find it useful to always refer to this lesson from Portia Nelson when pondering various scenarios.

AUTOBIOGRAPHY IN FIVE SHORT CHAPTERS

I

I walk down the street.
There is a deep hole in the sidewalk
I fall in.
I am lost ... I am helpless.
It isn't my fault.
It takes me forever to find a way out.

II

I walk down the same street.
There is a deep hole in the sidewalk.
I pretend I don't see it.
I fall in again.
I can't believe I am in the same place
but, it isn't my fault.
It still takes a long time to get out.

III

I walk down the same street.
There is a deep hole in the sidewalk.
I see it is there.
I still fall in ... it's a habit.
my eyes are open
I know where I am.
It is my fault.
I get out immediately.

IV

I walk down the same street.
There is a deep hole in the sidewalk.
I walk around it.

V

I walk down another street.

The next time you ponder a scenario or review those written by others try walking down another street. You'll get where you want to be much faster.

Ref: ***There's a Hole in My sidewalk: The Romance of Self-Discovery***. *Beyond Words Publishing Company, 1994. ISBN: 0941831876*

Singer/songwriter Portia Nelson is also an actress, author, painter and photographer. Among her many accomplishments, she has appeared on Broadway in numerous productions, hosted the radio program ***Sunday in New York****, appeared in films like* ***The Sound of Music****,* ***Dr. Doolittle*** *and* ***The Trouble with Angels*** *as well as in the TV soap opera* ***All My Children****. She also wrote the book* ***There's a Hole in My Sidewalk****, which was made into a musical featuring music, lyrics, direction and a performance by Nelson herself. Her song "Make a Rainbow" was performed at the 1993 inauguration of President Clinton.*

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US National Capital Region Chapter

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No longer "just another newsletter"

Future Takes Joins the "Major Leagues"!

Future Takes now has an International Standard Serial Number (ISSN), 1554-7744. This puts us in the US Library of Congress database and its equivalents in other countries.

Future Lite

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the physical and psychological assembly and special feature deactivation clauses of my new appliances.

I'm also in the market for a domestic engineer.

Note: Please feel free to send in your favorite quotes, predictions, anecdotes, topic du jour, scandals, pet peeves, gossip and rumors and you may find yourself captured in Future-Lite: AREA 51! lindanlee@hotmail.com

World Future Society US National Capital Region Chapter

Membership Application and Renewal Form

As a member of the National Capital Region World Future Society (NatCapWFS), you will receive **Future Takes** (the chapter newsletter), announcements of all chapter activities, and discounts at chapter-sponsored events. *If you would like to join us, please print out this form, complete it, and mail it to:*

Ken Harris
Treasurer
National Capital Region World Future Society
5416 Newington Rd.
Bethesda, MD 20816

This will confirm your membership for the year, list you in the chapter's online directory for networking, and qualify you for member pricing.

Date _____

Your Name _____

Your Spouses Name (for Family membership) _____

Organization _____

Address _____

Phone _____

Email _____

Areas of interest _____

_____

_____

Interest in helping the chapter? ____ If so, in which area? (programs, outreach, finance, membership, publications, digital media, public relations, sponsorship, etc.)

_____

Enclosed is my check, payable to the "National Capital Region World Future Society" for annual dues, or
Charge my __ Visa __ MasterCard __ American Express __ Diner's Club
Card No._____Exp.Date_____

( ) $35 for family membership (includes spouse)
( ) $25 individual membership
( ) $15 Full-time student