

FUTURE *takes*

Your international platform for future related issues

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INSIDE THIS ISSUE

From the President, World Future Society	2
Invitation to Join Weak Signals Group	2
Give Us Your Perspective on the Future	3
REGULAR COLUMNS	
Chapters' Corner	10
BOOK DISCUSSION SYNOPSES	
<i>Changing Rhythms of American Family Life</i>	7
<i>Meals to Come: A History of the Future of Food (California Studies in Food and Culture)</i>	11
BOOK REVIEW	
<i>Future Inc. – How Businesses Can Anticipate and Profit from What's NEXT</i>	13

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(See page 14)

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The 2nd Cold War

2006 2018

Translated from the original entry in Russian by:
Stephen Aguilar-Millan
Director of Research, The European Futures Observatory

An extract from the 2032 edition of the *Encyclopaedia of World History*¹:

THE SECOND COLD WAR (2006-2018): a geo-political confrontation between **RUSSIA** and the **USA** on a global scale. It is seen by some authorities as indistinct from **THE FIRST COLD WAR (1947-1989)**. However, as most authorities agree that the First Cold War ended with the fall

of **THE BERLIN WALL** in 1989, we are inclined towards the convention of regarding the First and Second Cold Wars as two distinct events.

With the fall of the Berlin Wall in 1989, the triumph of **THE WEST** was widely proclaimed. It was held that **CAPITALISM** had triumphed over **COMMUNISM** and heralded a new world order in which the **FREE MARKET** and **DEMOCRACY** would reign supreme. Over the course of the 1990s and the opening years of the new century, Russia experimented with forms of liberal democracy and

See Cold War, continued on page 4

Detached Observer – an Anachronism? The Scientific Method After Next

by Dave Stein

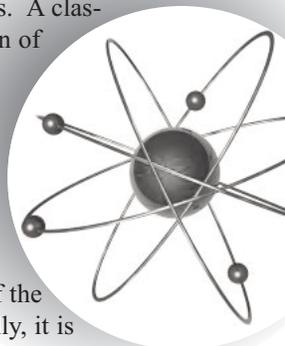
Like the religions and creation myths that predate it, contemporary science provides a framework for attempting to understand the universe. Replacing religious dogma with a new consensus-based scientific authority that is grounded in repeatable experiment and observation, it is itself based on a protocol that we know as the scientific method.

Contemporary scientific protocol is based, among other things, on the notion of the “detached observer” or experimenter, who is separate from – and impartial to – that which is

observed. In this sense, it is reductionistic. In other ways, too, science generally attempts to understand the whole in terms of the parts. A classic illustration is the notion of “action-at-a-distance” that underpins the inverse square law equations for gravitational force and electrostatic force.

However, scientific advances are now calling into question the notion of the detached observer. Actually, it is not always the advances themselves

See Scientific Method, continued on page 8





Mack

From the Desk of Tim Mack, President, World Future Society

We are definitely entering a new world of interactivity, driven by what has been called the Web 2.0 revolution of information co-creation, utilizing a range of 'social networking' tools. With 100 million Web logs (blogs) worldwide, the ease and efficiency of building communities

online has become extraordinary and so has the level of activity. For example, over the past year, the number of hits on the WFS web page has gone from 360,000 a month in January 2007 to 830,000 hits this last month, a healthy increase by any standard.

One critical trend here is the transformation of information generation responsibilities – not only is communication now largely dialogic, but formerly passive audiences are now empowered to become content generators (what is called a network effect)...and they are doing so in droves. This process is driven largely by the opportunities to offer new information of value and thereby replace existing structures with innovative ones.

OhMyNews in Seoul, South Korea, is an excellent example of this process in action. It was one of the first online media enterprises to bring citizens of all sorts into the news creation process as reporters (readers now generate up to 80% of the content). This has been so successful that the enterprise has held three international conferences on citizen reporting and has recently opened a 'citizen journalism' school.

The big issue in technology transformation is not Moore's Law (performance does continue to increase), but the much slower 'digestion' process of new technologies within the marketplace. This digestion includes both cultural acceptance by consumers and management's ability in business and government to utilize new capabilities effectively (or to put it more directly, the market acceptance of new technologies is a social dynamic). In a business setting, it centers around the interactivity of technology platforms and business models.

A second critical trend is the growing ability of technology to interconnect a skyrocketing range of individuals, activities and equipment, through GPS, RFID, and a number of other tools in development. Of the 30 billion chips in place worldwide, only a small percentage is presently Internet enabled. By 2012, there will be at least 14 billion Internet connected devices (Forrester). These interconnections will inform business decisions and provide a growing range of both overt and covert services. One major battle in the marketplace is over who will lead in the digital home market, but also involved is the connectivity of corporate truck fleets, citizen and consumer locations, and other potentially controversial capabilities. Once again, the acceptance of the technology is likely to be more problematic than its development.

Finally, there is the enormous acceleration that information technology has brought to organizations, the dramatic shortening of the time between information input and required decision. This also allows greater focus on specific topics at the same time the input expands to a much broader universe. In a recent foresight seminar with international business groups that I led in the Midwest, we were told that business decisions that took days were now being settled in global settings within mere minutes. While this 'decision acceleration' is enabled by new communications technologies, it also represents a significant culture shift and the growing role of automated expert systems in decision making. One critical example of that trend is program-driven trading on international stock markets, where multi-million-dollar decisions are made within seconds.

An intelligence officer recently noted that if the network of wikis and blogs that now interlace the US security community (including Intellipedia) existed in 2001, the 9/11 attacks would have had no chance of succeeding. As many will already know, the warning signs were already there, just not in a centralized platform where the relevant pieces of the puzzle could be assembled.

The Joint Worldwide Intelligence Communications System (which is only assessable to those with appropriate federal clearances) is built on the ARPANET technology and houses Intellipedia, which is also connected with other relevant networks. It is becoming one of the chief collaborative platforms in the federal intelligence community, in part because of culture changes brought by a new generation of young analysts comfortable with tools like social bookmarking and related 'tag cloud' analysis. As these Web 2.0 analytical tools mature, they are being picked by futurists, competitive intelligence analysts and strategic planners of all sorts.

As always, I am very interested in your thoughts and responses to my ramblings. I would be glad to get feedback and can be reached at tmack@wfs.org.

Invitation to Join Weak Signals Group!

Fellow futurists - you are invited to join the new group that we have started to collect images of weak signals worldwide, signals that often foreshadow the future. Visit <http://www.flickr.com/groups/weaksignals/> to contribute your observations of weak signals and to read the observations of other futurists.

Elina Hiltunen
Futurist and Researcher
Finland Futures Research Centre



FUTUREtakes

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Cold War

continued from page 1

the free market. Neither of these experiments was completely successful. Deep in the Russian psyche is a desire for a strong personality to exercise control over the Russian state, along with a desire for a central agency to look after the well being of the Russian people. Even during the most liberal phases of the Russian experiment with democracy and free markets, political power was concentrated in the hands of **PRESIDENT YELTSIN** and economic power was concentrated in the hands of **THE**

prised the former Soviet Republics. Generally speaking, the satellite states based in Europe tended to foster closer relations with the **EUROPEAN UNION**, with a number of the **BALTIC STATES** and **CENTRAL EUROPEAN STATES** joining the EU in the **GREAT ENLARGEMENT** of 2004. Equally, the former Soviet Republics in Central Asia (**KAZAKHSTAN**, **UZBEKISTAN**, **KYRGYZSTAN**, **TAJIKISTAN**, and **TURKMENISTAN** - the **FIVE 'STANS'**) fostered closer relations with both the USA and **CHINA**. This realignment was not to the liking of

Russian economy and formed the basis of a sharp increase in Russian per capita GDP. Whilst some of this newfound wealth was spent on improving the Russian infrastructure – see the rebuilding of **MOSCOW** – much of it was used to project and advance Russian foreign policy.

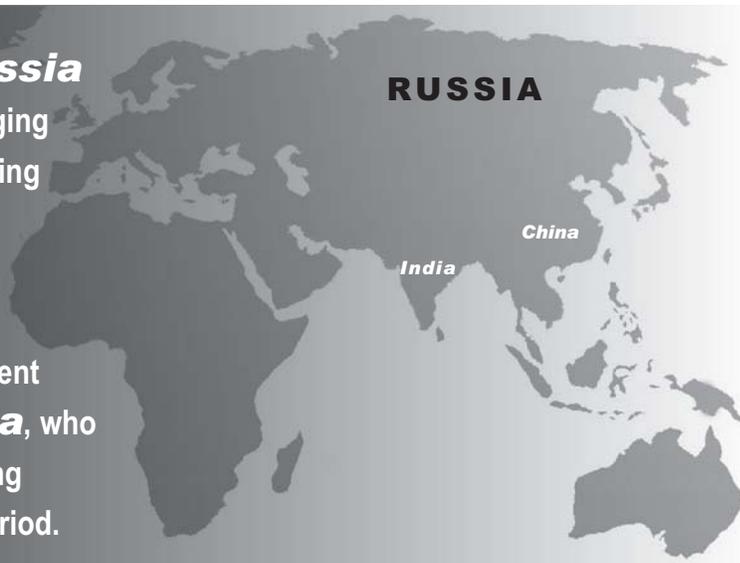
In the meantime, the USA, the main Russian adversary of the First Cold War, had not fared so well. Immediately after the fall of the Berlin Wall, the USA enjoyed a period of prolonged prosperity. Initially, this period of prosperity was due to the development of the '**NEW TECH-**

NOLOGIES' in the 1990s.

However, by the early years of the new century, the impetus caused by the new technologies had waned somewhat, and further prosperity became reliant upon cheap money and cheap energy. The development of the Asian economies – particularly those of **JAPAN**, China and **SOUTH KOREA** – led to large inflows of investment capital into the USA, which helped to keep interest rates relatively low. This was further enhanced as many of the oil surpluses were further recycled into the US

After 2018, Russia

lost interest in challenging the US; there was nothing more to challenge. Instead, the focus of Russian diplomacy turned to the containment of **China** and **India**, who had quietly been gaining strength during this period.



OLIGARCHS. The assumption of power by **PRESIDENT PUTIN** with the subsequent concentration of political power into his own hands, along with the wresting of economic power away from the oligarchs and into state hands merely returned the arrangements in Russia to their pre-1989 state of affairs.

Following the fall of the Berlin Wall, the **SOVIET UNION** fragmented into a number of separate states, the most significant of which being Russia. It is often held that the Soviet Union was an imperial manifestation of Russia, but without an Imperial dynasty. In the 1990s and the first years of the new century, there was an almost inevitable realignment of the **SATELLITE STATES** that com-

Russia, and went a long way to determining Russian foreign policy in the early part of the twenty-first century.

It was the economic weakness of the Soviet economy rather than military defeat that led to the collapse of the Soviet Union. The economic reforms of the immediate post-Soviet era failed to stimulate the Russian economy sufficiently to give rise to growing prosperity in Russia. However, the advent of **PEAK OIL** gave a large stimulus to the Natural Resources Sector in the Russian economy. By 2006, Russia had the largest reserves of Natural Gas in the world and – according to some measures – was the largest oil exporter in the world. The influx of **PETRODOLLARS** gave a large stimulus to the

economy.

The reliance of the US economy on cheap energy was not made too evident until energy costs started to rise in the first decade of the new century. As the world moved towards peak oil, so the price of oil and natural gas rose. It was at this point that policy makers in Washington realised the extent to which they were dependent upon Middle Eastern oil. It was to secure the Middle Eastern oil supplies that the US became involved in the **SECOND GULF WAR**. This was a war that pinned down the US both militarily and in terms of diplomacy for first decade of the new century. Disengagement was attempted in 2008, but the resulting chaos in the oil

See Cold War, continued on page 5

Cold War

continued from page 4

markets led to a reversal of that policy.

The first act of the Second Cold War is seen by most authorities as the disruption of the gas supplies to Ukraine by Russia early in 2006. This followed a period of tension between the EU and the US on one side and Russia on the other side over whose satellite Ukraine should be. At the time, Ukraine was a classic **'BOUNDARY STATE.'** Eventually, Ukraine would become a firm supporter of Russia, but, at the time, it was also seen as a potential member of the EU. This gave the world a taste of what was to come.

The position of President Putin needed constitutional clarification in Russia. He was scheduled to stand down as President in 2008, but a new clause was added to the constitution that allowed the President to stand for an unlimited number of terms and that extended the term of office from four to ten years. This gave the presidency of Mr. Putin the longevity that it needed.

The key Russian foreign policy objective in 2008 was the restoration of Russia as a global power, and for it to regain the status that it had lost after the First Cold War. Russian foreign policy saw the US as the primary adversary, and devoted much time and energy to countering US influence. This was directed along two lines, by first detaching the other world players – primarily Japan, the EU, and China – from the US sphere of influence and then by exploiting the strategic weaknesses of the US economy.

Relations between the US on the one hand and the EU nations and Japan on the other had been somewhat strained in the early years of the twenty-first century. With the removal of the Soviet military threat to Europe after the First Cold War, Europe preoccupied with the issue of further integration. Whilst many European nations were predisposed towards the US view of the world, this did not constitute a blank cheque in diplomatic terms, and European support for the US always

extracted a high price. Japanese pre-occupations at this time were over the rise of China, the security of energy supplies, and the assertion of Japanese sovereignty in East Asia.

Russia was able to exploit these differences. Europe was suffering from an energy deficit, which had partly been resolved by a growing dependence upon Russian energy supplies – particularly of natural gas. Russia was able to enhance this dependence through a series of long term contracts for energy supply at relatively soft prices right out to 2015. Part of the Russian oil surpluses were used in the acquisition of key European companies – especially oil and gas distribution companies. By 2010, Russian companies owned, or had significant minority interests, in 68% of the oil and gas distribution market in the EU.

Equally, with very little indigenous natural resources, the security of energy supplies was a key issue for the Japanese government. The Russian government was able to exploit this, again, through the use of soft energy contracts. Japan was also given status as 'preferred customer' for Russian energy supplies, although this should be seen more in the context of Russian policy towards China rather than in terms of Russian policy towards Japan. However, it was Russia who orchestrated the Japanese permanent seat on the UN Security Council in 2011, and it was Russia who vetoed at the UN the resolution condemning Japan testing its first nuclear weapon in 2009. In the period 2006-2011, both Russia and Japan became much closer,



Aguilar-Millan

at the expense of the US.

A third strand to Russian foreign policy was its treatment of the Five 'Stans' in Central Asia. The Five 'Stans' were former Soviet Republics, which Russia saw as a key part of their sphere of influence. However, the 'Five Stans' also border China, **IRAN**, and **AFGHANISTAN**. This geographical configuration was sufficient to cause both China and the US to take an active interest in the fate of the Five 'Stans.' The relative abundance of oil and natural gas reserves in the 'Five Stans' served to sow the seeds of further discord, especially as after severe winter of 2009, both China and the US were showing signs of energy shortfalls.

World affairs worsened greatly after 2012. It was at this time that the Russian government felt that it could flex some of the global power that it had accrued in the first decade of the new century. It was almost a given certainty that the flashpoint for confrontation would be the Middle East. It transpired that Russia had provided covert support to Iran in the development of a nuclear programme and that

Iran had diffused some of that technology to Hezbollah in Lebanon. The detonation of nuclear armed WMDs in Israel by a team of Hezbollah suicide bombers acted as a catalyst to warm up the cold war.

Israel retaliated through a small nuclear detonation in south Beirut. Russia drafted a resolution at the UN

condemning the use of WMDs by a UN member state, which was vetoed by the US. Russia retaliated by halting all oil exports worldwide. The chaos in the oil market was an event that will be remembered for many generations. An accommodation was reached after eight months fraught negotia-

It was the sale order from the Bank of Japan of short dated US T-Bonds on October 17th 2013, along with the purchase of ECB Euro Bonds by Berkshire Hathaway on the following day, which led to the rout of the US Dollar. In 48 hours, the US Dollar had depreciated by 20%.

Cold War

continued from page 5

tions, with the result that order would be restored to the oil markets, but that the price of Russian compliance would be the abandonment of Israel by the US. The **PALESTINIAN STATE** was established, financed, and armed, by Russia. The Palestinian State exacted revenge against Israel within days of its formation, reducing it to the state in which it is today.

By 2013, US foreign policy in the Middle East was in tatters. It was then that the US fully withdrew from **IRAQ**. The ruling classes in the various Middle Eastern kingdoms and principalities started to look very vulnerable to popular discontent. In order to disarm this discontent, a number of Middle Eastern states adopted a stance that was much more critical of 'the West,' and endeavoured to strengthen their ties with Russia.

Events over 2012-13 had the effect of weakening the US Dollar as an international currency. What had started as a softening of the currency soon developed into a full scale panic. It was the Asian nations who first added impetus to the crisis. The central banks of Japan, China, and South Korea, all of whom were by now dependent upon Russian energy supplies, had been quietly disposing of their long dated US T-Bonds. It was the sale order from the Bank of Japan of short dated US T-Bonds on October 17th 2013, along with the purchase of ECB Euro Bonds by Berkshire Hathaway on the following day, which led to the rout of the US Dollar. In 48 hours, the US Dollar had depreciated by 20%. To many commentators, this marked the end of the '**AMERICAN CENTURY**.'

The final weakening of the US currency came a few weeks later when the Russian government announced that all oil contracts from 1st April 2014 would be denominated in Euros. This was quickly taken up by a number of Middle Eastern states, and, by the end of 2014, all **OPEC** contracts were denominated in Euros. The effect on the US monetary system

of such a shock was to add almost a war premium to US interest rates. Rising from 5% in September 2012 to 9% in December 2014, the effect on the US economy was an acute downturn in economic activity.

The rest of the world was relatively immune from this downturn in activity in the US. During the period 2006-14, globalisation had continued apace. The rising nations of this period, the '**BRIC**' economies², had developed sufficiently to lessen the dependence of the global economy upon the US consumer as an engine of growth. Whilst there was some downturn in global activity, the 'Great Recession of 2014-22,' as it is known in the US, was not at all severe in other areas of the world.

However, it did have a big impact in the US, and was sufficiently acute to dominate the US Presidential elections of 2016. By this time, the 'Red State; Blue State' division of the 2004 election had been replaced by a 'White State; Brown State' division. In geographical terms, the US was roughly divided by a line running from the southeast corner in Florida to the northwest corner in Washington State. South of the line was 'Brown,' and north of the line was 'White.' The Great Recession made these divisions all that more acute.

The election of **PRESIDENT CABOT** in 2016 rather exacerbated matters. President Cabot appeared to be an austere man who did not catch the tempo of the nation. His policies were interpreted in the Brown States as designed to channel funds away from their interests into the interests of the already wealthy White States. A redistribution from the poor to the rich in a time of national hardship. It led to a campaign in the Brown States to withhold the remittance of Federal Taxes to the Federal Agencies. This campaign was very widely adopted in the Brown States and so successful that it brought the Federal Government to the edge of bankruptcy. It also emboldened the State of Texas to seek to leave the Union in 2018.

The potential secession of the

State of Texas is seen by many authorities as the event that marks the end of the Second Cold War. At that point, the US economy was severely damaged, US prestige across the world was at the lowest in the history of the US, and the nation was bickering and fighting amongst itself. After 2018, Russia lost interest in challenging the US; there was nothing more to challenge. Instead, the focus of Russian diplomacy turned to the containment of China and India, who had quietly been gaining strength during this period.

Stephen Aguilar-Millan is the Director of Research, The European Futures Observatory.

POINTS FOR THE CLASSROOM

(send comments to articles@futuretakes.org):

- *The scenario presented in this excerpt illustrates a plausible next "act" or "scene" in a drama that pervades human history – that superpowers come and go. How will this era of rapid change impact the pace of this drama? Furthermore, which nation-states – or other entities – will be the superpowers in 2032, and why? Or will the notion of superpower itself be outmoded at that time?*
- *In addition to the factors identified in this excerpt, what other factors will drive geostrategic alignments – including actors other than nation-states – in 2025?*
- *In 2025, how relevant will oil be as an energy source, and with what geostrategic consequences?*
- *In this excerpt from the Encyclopaedia of World History, 2032 edition, Russian companies owned, or had significant minority interests, in 68% of the oil and gas distribution market in the EU by 2010. In 2025, will international (or foreign) ownership of corporations mitigate tensions that can lead to war? Alternatively, will such corporations, as new geostrategic actors, themselves be a source of new tensions that can lead to war? Why or why not?*
- *In this excerpt from 2032, it is the exercise of the diplomatic and eco-*

See Cold War, continued on page 7

Book Discussion

• • • FUTUREtakes is pleased to publish synopses of World Future Society chapter programs. The following book review/discussion synopsis is from the Futurist Book Group of the Washington DC chapter.

Changing Rhythms of American Family Life

by **Suzanne M. Bianchi, John P. Robinson and Melissa A. Milkie**
Russell Sage Foundation
Publications (September 2007)
272 pages
ISBN-10: 0871540932
ISBN-13: 978-0871540935

Synopsis of the June 2007 meeting of the Futurist Book Group (Washington DC Chapter); summarized and reviewed by Ken Harris

The book addresses as objectively as possible how parents and their minor children spend their time and how their time use has changed over the past 40 years. The authors use data from time use diaries on which to base their conclusions. The diaries cover all daily activities of those surveyed including market work (i.e., work for pay), leisure, and personal and family care activities. The authors present data separately for married fathers and mothers with minor children and for single mothers with minor children. Besides several chapters on parents' use of and feelings about time, there is also a chapter

on children's time use. Some FUTUREtakes readers, especially ardent feminists who believe that women are unfairly burdened with both paid work and household management, may take sharp issue with conclusions in the book. Nevertheless, it will be of general interest to anyone interested in social trends and of particular interest to those interested in aspects of behavior (e.g., time spent in television watching).

Of no surprise is the authors' finding that the nature of motherhood has changed, principally because mothers do far more market work than they used to do. In a large urban area like Washington DC where there are plenty of professional career women, one might think that most married women work for pay full-time or even longer than the standard 40-hour week. Not so, say the authors. The average number of hours American women spend on market work per year remains less than full-time because some women do no market work and others work part-time or take time off to meet their children's

needs. Women's market work histories are far more episodic than men's.

What is surprising, considering media images of overburdened mothers, is that despite spending far more time on market work, mothers are not spending significantly less time with their children. They are maintaining and even strengthening relationships with their children because they are spending much less time on housework and fathers are pitching in and doing much more routine housework including routine childcare. Fathers are also becoming far more involved in their children's lives. The main reason this is so, say the authors, is that technology and convention have given parents far more choice over when to have children. Consequently, children are more cherished, and parents are in a better position to give them the care they think they ought to receive. Also parents are increasingly attuned to the dangers children face in the modern world in their absence.

The book exposes stresses in American family life in two major ways. First, the chapter on children's time use says that 34 percent of those surveyed wished their mothers would be less stressed and tired and 28 percent wished the same for their fathers. Only 10 percent of the children actually wanted more time with their mothers and 16 percent wanted more time with their fathers. Second, the amount of time members of married couples spend with each other declined 26 percent between 1975 and 2000.

The authors take strong issue with the feminist contention in books such as *The Cultural Contradictions of Motherhood* by Sharon Hays and *The Price of Motherhood* by Ann Crittenden that married mothers are unfairly burdened because they must work a second shift doing housework after a full day of market work. On

See Rhythms, continued on page 10

Cold War

continued from page 6

conomic instruments of national power (in conjunction with developments elsewhere) that makes Russia the dominant geostrategic actor. Between now and 2032, will these instruments of national power largely supplant the military instrument? Why or why not?

- *In addition to the factors identified in this excerpt from 2032 – for example, the impact (or lack thereof) of new technologies, and the reliance of various nations on cheap money and cheap energy – what other factors will influence the rise and decline of nations between now and then?*

- *One might normally expect a decline of the US dollar, such as the decline beginning in 2014 (in this scenario), to help the US export market. Would this reverse the transition of the US from an industrial economy to a service economy – considering also that in this same time frame, the role of the US economy as a global economy growth engine had reduced? (See related "Point for the Classroom" in David Pearce Snyder's article, Fall 2007 issue.)*

¹ *As is customary for scenarios, the events herein are fictitious.*

² *Brazil, Russia, India, and China*

Scientific Method

continued from page 1

that are new; instead, their impacts are now becoming more understood and may well be pervasive in next-generation science. For example, since the advent of quantum mechanics, it has been more readily apparent that the process of observing or measuring something influences the outcome. In a rough sense, this is because the mass-energies used to make the measurements are comparable to the mass-energies of that which is being measured.¹ But the mechanism of influence does not stop here. The act of choosing the experiment itself influences the outcome. Case in point: an electron can manifest as a particle or as a wave, depending on how one chooses to observe it. One can argue that this applies in the social sciences and other walks of life as well, since the answer to a question is often influenced by the way in which the question is framed. So, just how “detached” is the observer or principal investigator?

QUANTUM ENTANGLEMENT – THE END OF REDUCTIONISM?

More generally, the notion of separateness or reductionism itself may need to be re-addressed – specifically, in the context of the Einstein-Podolsky-Rosen paradox and

“gedanken experiment” first proposed in 1935 and performed years later by Alain Aspect (1982). As commonly interpreted, the results of this experiment challenge the reductionistic notion of “action-at-a-distance,” as this would require a superluminal signal that violates special relativity. Instead, the results suggest an interconnectedness or “quantum entanglement” that seemingly permits “instantaneous communication” among the particles involved without requiring the forbidden superluminal signal. But the term “communication” (as commonly understood) is a misnomer, and if the particles involved in the experiment are indeed quantum entangled, then how “separate” are they? To a number of physicists, the results of this experiment point to a larger “system” whose properties depend on its entirety and are beyond analysis in terms of its components. If so, how scalable is this notion of larger system, and with what implications to reductionist-based scientific frameworks?

THIS FAR – AND NO FURTHER

Compounding this challenge are the limitations inherent in science and mathematics, and now perhaps even in their foundational deductive logic – limitations that scientists themselves have been among the first to acknowledge. They have long known that science, itself a means to understand the universe, at best only describes and predicts; it does not “explain” except in terms of consistency with other accepted observations and facts. At some point, it rests on fundamental axioms and postulates that are beyond deductive proof and accepted “on faith.” To many who ponder this matter, it is self-evident. However, funda-

mental limits to axiomatic mathematical systems and deductive reasoning are captured in Gödel’s theorem. According to mathematician Kurt Gödel, the consistency of a finite mathematical system is provable only

at a level external to itself, and this in turn argues against the completeness of the system.² This inherently limits what can be known or expressed in terms of a finite system of axioms. Thus, at some point, it’s back to “faith” again. In this sense, science differs from religion only in the level of consensus involved.

Today, however, science is now “proving” its own

limitations with new discoveries and continual reinterpretations of old ones – even going back as far as Thomas Young’s double slit experiment in 1802 and the notion of counterfactual³ that emerged from it, a notion with possible implications to logic and to scientific experimentation. For its part, the Heisenberg uncertainty principle⁴ supports the contention by some physicists that uncertainty and inconsistency are basic to nature and that beyond a certain point, nature is unknowable in the objective scientific sense. If true, this has profound implications for the predictive capability of science.

Now throw in quantum logic, in which the “law of the excluded middle” (i.e., that everything must be “true” or “false”) no longer rigorously applies. Taken to the extreme, this challenges the notion of binary “either-or” thinking.

THE SOCIAL AND CULTURAL CONFLUENCE

Although the limitations of detachment, reductionism, and science

See Scientific Method, continued on page 9

A confluence of Asian cultural influences and advances in particle physics may pave the way for a scientific method that is less reductionistic than the present one, and in fact the term “particle” itself has a reductionistic connotation. Futures studies and the organizations that enable and support them might well be a third player in this confluence.



Scientific Method

continued from page 8

itself may herald profound changes in the scientific method (albeit not immediately), social and cultural factors may well magnify the impacts of these limitations. With the increased interaction among the cultures of the world – for example, via travel, communications, commerce, and education (including self-development) – there is an increased cross-flow of ideas, philosophies, and perspectives among peoples, cultures, and regions. In comparison with cultures generally characterized as “Western,” Asian cultures are generally more holistic and less reductionistic in their approach to nearly everything including philosophy, religion, medicine, business relationships, and even warfare. This is underscored by the fact that in contrast with the individualism that characterizes the United States and parts of Europe, Asian cultures tend to be more group and personal relationship oriented. A confluence of Asian cultural influences and advances in particle physics may pave the way for a scientific method that is less reductionistic than the present one, and in fact the term “particle” itself has a reductionistic connotation.

Futures studies and the organizations that enable and support them might well be a third player in this confluence. By their very nature, futures studies are holistic and interdisciplinary as they examine the cross-cutting implications of technology advances, social trends, and policy decisions.

Another impetus is the continual quest for answers, for understanding – and with it, increased interest in personal experience. Although many regard science as a rebellion against religious dogma and the authority of religious establishments, it substituted its own authority, scientific consensus, for the authority that it sought to sup-



Stein

plant. In doing this, it has tended to marginalize the role of personal experience, especially experience that cannot be replicated under controlled conditions. Like many religions, especially the “revealed religions,” contemporary science is consensus-based. However, in the coming years, it is reasonable to expect increased interest in personal experience at the individual level, especially as people seek answers that are seemingly beyond both contemporary science and mainstream religion.

This does not necessarily foreshadow a return to creation myths that “explain” that which is beyond objective knowledge, to be experienced only at the personal or subjective level. Interestingly, however, physicists as eminent as Stephen Hawking have suggested that a thorough understanding of the “Big Bang,” the modern scientific counterpart to ancient creation myths, might be forever beyond our reach. Once again, “this far and no further.” Meanwhile, the anthropic principle⁵ reverberates, in essence reminding us that it is not only our choices of what to measure or observe that limit us; indeed, the universe cannot be known to us in a scientific sense independently of human measurements or observations. This again begs the question, albeit at an even more fundamental level that is beyond our present purposes, “What is a detached observer?”

NOT THE FINAL FRONTIER

In the meantime, science marches ever forward, joining forces with other fields of study in ways that sometimes lead to new areas of investigation. Case in point: research on “physics of consciousness,” where one can envision that the role of personal experience will only be magnified. This may present an interesting dilemma for peer-reviewed journals (already facing other challenges) – as such journals are grounded in “objective,” consensus-based science and repeatable results, and generally they are not designed to accommodate anecdotal evidence, at least not outside of large statistically-significant

population samples.

One can even be sure that there will be scientific advances that are not yet envisioned. Like many scientific laws and findings before them, the Heisenberg uncertainty principle, quantum logic, counterfactuality, and even Gödel’s theorem may themselves be overturned someday, as scientific principles, laws, and discoveries are rarely final. As scientists continually

Like many religions, especially the “revealed religions,” contemporary science is consensus-based. However, in the coming years, it is reasonable to expect increased interest in personal experience at the individual level, especially as people seek answers that are seemingly beyond both contemporary science and mainstream religion.

push back the so-called frontiers of ignorance, “this far and no further” itself recedes with time. It would be premature to characterize the new scientific method that will emerge from the seeming irreconcilability of personal experience and the entangled observer with the scientific method and consensus-based science. Equally premature would be speculation on the remaining “tenure” of the scientific method as we presently know it. Less disputable is the growing possibility for substantial changes in scientific protocol.

Dave Stein is a physicist and is Editor-in-Chief of FUTUREtakes.

¹ As a macroscopic analogy, consider using a thermometer with a bulb the size of a basketball to measure the temperature of water in a bathtub. Unless the thermometer bulb and the bathtub water are at thermal equilibrium at the outset, the very immersion of the large bulb into the water itself changes the water’s temperature, the “accuracy” of the thermometer notwithstanding.

See *Scientific Method*, continued on page 12

CHAPTERS' CORNER

Building Vibrant Organizations

by Verónica Trovamala,
Chapters' Corner Editor

In today's "chronologically challenged" (not-enough-hours-in-the-day) societies, there is substantial competition for one's already limited disposable time, particularly among people who have diverse interests. The future of disposable time and volunteerism is itself a topic of growing interest, perhaps best left for another day. For now, if a professional society or interest group is to inspire sufficient interest to be viable, the imperative for

its leaders is to make the organization a priority for enough people.

FUTUREtakes, now a success story in its own right, has also faced – and successfully met – various challenges. Based on our experiences and our own observations of several vibrant as well as dysfunctional organizations, we have identified some tips for success that have served us well. In anticipation that you may also find them useful, we have posted these tips at www.futuretakes.org/VibrantOrganizations.htm. We invite you not only to implement them (if you are not

already doing so) but also to add to the list.

Chapter leaders – if you are starting a new chapter or reviving an existing one, representatives of **FUTUREtakes** will be available to meet with you individually at World Future 2008 to discuss these tips for success and related matters in greater depth and in the context of your own chapter's needs. If you are interested, contact us at chapterscorner@futuretakes.org or managingeditor@futuretakes.org so that we can schedule someone to meet with you.

Rhythms

continued from page 7

the basis of the time diaries, the authors reach three important conclusions contradicting the traditional feminist view:

- In the past, a specialization ("separate spheres") argument dominated the time allocation literature, especially in economics. Mothers specialized in the home, fathers in the market. Specialization seems to be giving way to much more similar time allocations of mothers and fathers, although it certainly has not disappeared, as we have discussed.
- Among all parents (as discussed in chapter 3), the average total workload is almost equal, with married mothers averaging 65 hours and married fathers 64 hours per week. These equal overall workloads are found despite marked gender differences in paid versus unpaid work with fathers performing 34 percent of housework and 33 percent of childcare in contrast to 64 percent of market work. In hourly terms, mothers averaged 19 fewer weekly hours of market work than fathers, but 13 hours more of housework and shopping and 6 more hours of child care.
- A final important comparison is that

among couples where both are employed full-time, there is remarkable gender equality in total workloads, with mothers averaging 68 hours per week compared with 67 hours for fathers.

And, what does the future hold? While the authors find far more gender equality in family division of labor existing today than in the idealized 1950s, they doubt that full gender equality is in our future, at least not for a very long time, because parents fall into gender-specialized roles once a child arrives. They settle on a pattern of gender-specialized activities when the children are young and find it difficult to re-negotiate such patterns when the children leave the nest. Children observe them in these specialized roles and perpetuate them as adults.

Because everyone around the table could relate personally to the issues raised by the authors, discussion of this book was one of the liveliest the group has had in its 3-year history. The statistics shed light on matters important to us all. Read the book and see for yourself!

POINTS FOR THE CLASSROOM

(send comments to articles@futuretakes.org):

- *This book was written from a US*

standpoint. To what extent are the authors' observations valid in other parts of the world, and what are the long-term implications for families there?

- *In "chronological challenged" societies characterized by long work days and ever-lengthening commutes that limit family time, will more people opt for a different lifestyle, with different priorities (e.g., more family time and leisure time) in 2020 than now? Conversely, will fast paced societies become more pervasive throughout the world? What other factors will influence how people live and work?*
- *Another contributor to "chronological challenge" is diversion. It has been argued that diversions provided by television and now by Web surfing have been at the expense of family quality time. What trends or possible "wild cards," if any, will reverse this trend in the next 15 years? Also, will diversion- and stimulation-oriented societies be more pervasive or less pervasive at that time?*
- *In 2020, will more people in your part of the world choose not to have families, or will a new family pattern emerge?*

Book Discussion

• • • FUTUREtakes is pleased to publish synopses of World Future Society chapter programs. The following book review/discussion synopsis is from the Futurist Book Group of the Washington DC chapter.

Meals to Come: A History of the Future of Food (California Studies in Food and Culture)

by **Warren Belasco**
University of California Press, 2006
393 pages
ISBN-10: 0520250354
ISBN-13: 978-0520250352

Synopsis of the July 2007 meeting of the Futurist Book Group (Washington DC Chapter), joined by Tom Key, coordinator, Orange County (California) chapter; summarized and reviewed by Ken Harris

In at least two respects this book differs from our other readings. First, it is not about the future we face today in 2007. Rather it is about what people over the last two centuries, mostly in the US and UK, have thought the futures they faced would be like with special reference to the future of food. Second, it surveys past views of the future in general and the future of food in particular that were expressed in fiction as well as in non-fiction. (Except for our April 2006 selection, *Future Washington*, a collection of visions of the future of our metropolitan area written by prominent science fiction authors, all our previous selections have been non-fiction books.) The book examines views of the future of food not only in books and articles but also in world's fairs, especially the Chicago World's Fair of 1893, the St. Louis World's Fair of 1904, and the New York World's Fairs of 1939 and 1964-1965. Additional information about world's fairs is available at <http://www.worldsfairphotos.com>.

Any futurists who are not already humble about their visions of what the future will or could be like should read this book because most past visions of the future of food were wrong and some were way off the mark. It seems people envisioning the future of food

were particularly unable to rid themselves of short-term biases when visioning the future in fiction or forecasting it in non-fiction. Belasco says that predictions about future food supplies have been influenced by four main factors: (1) sudden inflation in food prices; (2) environmental stresses; (3) scary demographics; and (4) cultural anxieties about sexuality, working class unrest, unruly immigrants, or the ominous "Other." He says, for example, that Malthus' forecasts of future food shortages were influenced by the great increases in population in North America and Britain and that the poor in 19th century Britain were denied food aid lest they be encouraged to reproduce (Meat in the diet was thought to aid sexual vigor!). In addition, he consistently shows throughout the book that past forecasters failed to foresee the great improvements in agricultural technology that have consistently produced food surpluses rather than food shortages. For example, he says in a segment about forecasts in the 1920's, "Future USDA secretary and US Vice President Henry A. Wallace agreed that even if farmers were 30 percent more efficient in 2025 – a very generous increase by contemporary forecasts – a US population of 200 million would necessarily live 'largely on foods of cereal, vegetable and dairy origin.'" In fact, he shows that dire forecasts of food shortages actually caused gluts of food because they inspired drives to increase agricultural production. For example, he says, "While American consumers' complaints about food inflation led the Nixon administration to impose temporary price controls on beef, the crisis was much worse in poor countries

dependent on imports of both grain and the oil needed to grow the Green Revolution's chemical-dependent seeds. This was the context for USDA Secretary Earl Butz's infamous call on American farmers to plant 'from fencerow to fencerow' – an encouragement to overproduce that eventually led to declining prices, Grain Belt depression, and fatter consumers."

Belasco effectively contrasts the views of Malthusians, cornucopians, and egalitarians on the future of food, particularly on the food supply, over the past 200 years. Malthusians have felt that eventually growth in population would lead to food shortages such that people would not have enough to eat or that they would not be able to eat the foods they wished to eat, particularly meat. Cornucopians, on the other hand, have felt that good things would happen to assure adequacy of the food supply even though we might not be able to foresee exactly what they will be, particularly improvements in agricultural technology, and that all would be able to share in the benefits of increased production. Egalitarians took a view in between the two extremes; they felt that adequate increases in food production were possible but were not sure that food would be equitably distributed. Belasco vividly portrays the contrasting views in "Part II: Imagining the Future of Food: Speculative Fiction," which contains surveys of utopian and dystopian fictional portrayals of the future of food.

Surprising to a reader unfamiliar with literature on the future of food are Belasco's discussions throughout the book of the racist, classist, and sexist components of views of the future of food. Throughout the 19th and most of the 20th century, he says that diets containing meat were thought to be superior to vegetarian diets. Diets containing meat were thought to be

See Future of Food, continued on page 12

Future of Food

continued from page 11

those of people who had attained higher levels of civilization whereas vegetarian diets were thought to be those of “inferior” races, particularly in Asia. Also meat-containing diets were thought to be diets of the prosperous and vegetarian diets to be diets of the poor. In a view that persists to our own time, although in modified form, men were thought to prefer meat-containing diets and women to prefer vegetarian diets.

The other major contrast in the book is that among the Classical, Modernist and Recombinant views of the future. The Classical view which prevailed primarily in the late 19th and early 20th centuries was that the food supply, at least in North America and Europe, would be adequate because “superior” Western civilizations would conquer and exploit new lands. This view was symbolized in the imposing structures at the Chicago World’s Fair of 1893, particularly that of the horticultural building. Two forces discredited this view – World War I, in which millions of citizens of supposedly superior nations were slaughtered, and the end of new lands to conquer and exploit (e.g., the American frontier had closed, so there was no more cheap land.) The modernist view, which prevailed mainly from the 1920’s until the early days of the US space program, was that the food supply of the future would be adequate because of technology. Everything would be streamlined as symbolized in the architecture of the buildings at the 1939 New York World’s Fair and in design of all sorts of machinery. Diets would consist of synthetic foods. Whole meals would be encapsulated in pills or people would eat algae. The great increases in agricultural production after World War II as well as people’s strong preferences for familiar foods discredited this view. It lasted into the early days of the US space exploration program, but the astronauts’ revulsion at the synthetic foods they ate as well as more space in and capacity of space

vehicles forced and allowed NASA to provide traditional foods in high-tech form to the astronauts. The Recombinant view, the one prevailing in recent times, is that people want new, but not too new, foods. They like the taste of traditional meats, fruits, and vegetables and want some, but not all, of the food preparation to be done for them.

The group’s discussion concluded with speculation about the food shopping experience of future generations. Most thought people of the future would still want to go to grocery stores so that they could see, touch and feel the foods they are buying. However, the food stores of the future would fully exploit information technology, mainly RFID, to assure that the foods consumers want are always in stock and to speed their checkout.

POINTS FOR THE CLASSROOM

(send comments to articles@futuretakes.org):

- *Belasco presents and contrasts three viewpoints on the future of food – the Malthusians, the cornucopians, and the egalitarians. With which of these three viewpoints do you agree, and why? What relevant factors have not been considered by any of these three viewpoints?*
- *Considering the classical, modernist, and recombinant views of the future as applied to the future of food, which view best describes the future of food in the next 15 years in your part of the world and elsewhere? Consider the following factors:*
 - *The possibilities of pressure to obtain increased yield per acre.*
 - *Water, energy, and environmental issues.*
 - *Increased interest in natural foods and vegetarian diets.*
 - *The reluctance of some people to change their food habits.*
 - *Lifestyles that influence food choices – e.g., home-cooked meals, “fast food,” restaurant meals.*
 - *Other factors that you identify.*

Scientific Method

continued from page 9

- ² (Actually, this is one of his theorems.) In 1931, mathematician Kurt Gödel proved that no axiomatic mathematical system can prove its own consistency and completeness through deductive reasoning. In fact, it has been argued that paradoxes or pseudo-paradoxes – for example, the legendary barber who shaves himself “if and only if he does **not** shave himself” – are inevitable consequences of finite axiomatic systems.
- ³ Counterfactualty can be regarded as the effect, on an observable outcome, **of the mere existence or potentiality** of an alternative that did not actually occur. Macroscopic analogy – imagine that you are driving from point A to point B and can choose from among several possible routes. Even if your vehicle is the only one on the road at the time (such that traffic volume is not a factor), the existence of routes that you do not choose influences your experience of the route that you do choose! The implications of the double slit experiment, and of the more elaborate experiments that followed it, continue to be subjects of study.
- ⁴ The Heisenberg uncertainty principle prohibits **simultaneous** knowledge of two **conjugate** quantities – e.g., position and momentum (mass multiplied by velocity) for the same coordinate – with arbitrary precision.
- ⁵ As often expressed, “The universe is as it is, because otherwise we would not be here to notice.”

Coming in

June
2008!

Second Cross-Cultural Thematic Issue

- Gain useful insights from various peoples and nations on meeting the challenges of the future!
- Identify culture-based assumptions that limit futurist thinking!
- Examine cross-cultural influences on the ways in which people will live and work!

For further information, visit
<http://www.futuretakes.org/ThematicIssue.htm>.

Book Review

by Eric Garland
AMACOM 2007
ISBN-13:978-0-8144-0897-1

reviewed by Jay Herson

Just after I vowed that I would not read another book on futurist methodology I picked up a copy of Eric Garland's recent book *Future, Inc. – How Businesses Can Anticipate and Profit from What's NEXT* and am glad that I did.

The book is divided into two parts. In the first part Garland takes the reader through a thought provoking, almost-interactive, Internet-era journey through creation and implementation of future scenarios. He chooses the beer industry for his example because we all have some familiarity with beer or at least with pretzels. Although technical, the approach is down-home and entertaining ("this book wouldn't be as much fun if it took you on a journey through the future of ultrasonic flow meters for sewage-treatment plants. Take it from me...I have done that study, too"). Wisely, other examples are also presented in addition to the beer industry "class project," presumably because Garland feels these examples are the best way to illustrate certain points.

Garland takes the reader through Google-free preparation for a futures study – systems thinking, reading the trade magazines, and talking to experts in the industry. Eventually issues develop and these issues lead to broader issues. Now there is an inventory for Internet search. Futurists beware – there is a lot of media hype in cyberspace. How do we detect it, how do we dispose of it? With the help of some well-prepared graphics Garland makes the STEEP (trends related to Society, Technology, Economy, Ecology, Politics) search for trends, systems thinking, the futures wheel and the impact/probability matrix come alive and fit logically as he leads us through agriculture, brewing, pack-

Future Inc. – How Businesses Can Anticipate and Profit from What's NEXT



Garland

Futurists beware – there is a lot of media hype in cyberspace. How do we detect it, how do we dispose of it? With the help of some well-prepared graphics Garland makes the STEEP (trends related to Society, Technology, Economy, Ecology, Politics)

search for trends, systems thinking, the futures wheel and the impact/probability matrix come alive and fit logically as he leads us through agriculture, brewing, packaging, shipping, etc. on the way to the backyard deck.

aging, shipping, etc. on the way to the backyard deck. Garland tells us to avoid presenting three scenarios because the client will always punt to choosing the middle one and the extremes will not be considered. Instead present four scenarios, representing the cross between two levels of probability and impact. Part one is concluded with a realistic look of how to present and defend the final report to the client. How to deal with the ever-present naysayers and to realize that even the best of reports might never be read. At least we used the best methodology.

Part two takes us through drivers of the future i.e. trends that apply to most future studies. What are the implications of aging, falling prices for information technology, health care, biotechnology, energy, nanotechnologies, and media / communications? Each of these topics could be the subject of a book on its own but Garland spares us a long discourse. He focuses on how these trends will affect the business community. For example, instead of dwelling on the increased cost of health care he emphasizes that the future lies in keeping people well and this is a busi-

ness opportunity. Other health care opportunities are: the shortage of specialists due to malpractice insurance and lawsuits can lead to worldwide competition for talent; redesign to promote health, and dealing with the chronically sick worker as Baby Boomers refuse to retire. These are very stimulating thoughts to someone who sits in a cubicle all day and Garland's enthusiastic approach almost makes the reader drop everything and look for investment opportunities.

This book is highly recommended for those curious about futurist/strategic planning methodology as well as practicing futurists and especially for people at all levels in business, government and non-profit organizations that are concerned about the future and need to learn that the future is a friend and not a foe.

Jay Herson is Managing Editor and a frequent contributor to FUTUREtakes. He is also Senior Associate at Johns Hopkins University and the Institute for Alternative Futures. His essay on "paid volunteerism" will appear in the World Future Society 2008 Conference Volume to be published in July.



FUTURES LEARNING

World Future Society

by Steve Steele, Peter Bishop, and Dave Stein
WFS Learning Section Steering Team

This issue features activities associated with World Future 2008: Seeing the Future Through New Eyes, scheduled for July 26-28 in Washington DC. For updates or additional information, visit www.wfs.org.

INSIDE THIS ISSUE:

1. The WFS Education Summit, Learning for Tomorrow
2. College Credit for WFS Conference Attendance
3. World Future 2008 – additional sessions of interest to educators

1. The WFS Education Summit, Learning for Tomorrow

contributed by Susan Echard, Vice President, Membership and Conference Operations, World Future Society

Education Summit: Learning for Tomorrow
July 26, 2008
9:00am-5:00pm
Washington DC

The Education Summit, scheduled in conjunction with "World Future 2008: Seeing the Future Through New Eyes," will explore the cutting edge of education. A full-day program, the Summit will look at what tomorrow holds for education, including new technologies, new techniques and approaches to teaching futures, and visions for the coming decades.

8:30-9:00am Light Continental Breakfast
9:00-9:10am Overview of Day

9:10-10:30am *Global Online Learning Pioneers (Panel of 7 students)*

Ted Kahn, co-founder, president, and CEO, DesignWorlds for Learning, Inc.

Neerja Raman, senior fellow, Stanford University and Media X Project

WFS Futures Learning Section *Bulletin*

Winter 2007-2008

Online and virtual learning are now expanding rapidly beyond the major industrialized countries. The availability of high quality learning and teaching resources on the Web, many free of charge through open source or open access portals, is opening up incredible learning opportunities for students of all ages all over the world. However, we also need equal focus on how these resources are put into practice and how to support the diversity of student learning needs.

10:30-10:45am
10:45-12:00n

Break

Some Suggested Priorities for Futurists in the Classroom

John Smart, president, Acceleration Studies Foundation

Ideas will be shared for better foresight curriculum development at all educational levels and online community development. A brief overview of what is involved in developing and teaching a foresight course at a leading university will be discussed.

12:00-1:00pm
1:00-1:45pm

Lunch

Designing the Future of Education

Irene Brock, partner, FuturEd, LLC

A comparative overview will be presented that enables participants to identify the critical differences between the old factory-model schools we still have and the 21st century learning centers we need.

1:45-2:45pm

Teaching Futures and Futures Education

Stephen Steele, professor of future studies, Institute for the Future@AACC

Peter Bishop, president, Strategic Foresight and Development

2:45-3:00pm
3:00-4:30pm

Break

Future Trends and Visions for Education

David Pearce Snyder, president, Snyder Family Enterprises

Dennis Peterson, superintendent, Minnetonka School District
Arthur Shostak, professor emeritus of sociology, Drexel University

4:30-4:45pm Summary of Day's Events

Registration fee: \$75 members/\$125 nonmembers (includes light continental breakfast). Note: this is separate from WFS conference registration.

The conference is scheduled for July 26-28, 2008, in Washington DC. For additional information about the conference and the pre- and post-conference activities, visit www.wfs.org.

2. College Credit for WFS Conference Attendance

contributed by Professor Steve Steele

College students – here's a chance to get college credit for a futures course that integrates attendance at the World Future Society 2008 conference!

Anne Arundel Community College is offering the three credit hour course, FTR-100, Exploring the Future. Section 840 is a hybrid course that integrates attendance at the World Future Society Conference in Washington, D.C. (July 25-28) and online course modules before and after the conference. Student projects will integrate conference experiences. The course provides an opportunity to investigate the future in a changing world. Using tools and perspectives across fields of study and cultures, students expand foresight and build the future. The professor is Dr. Stephen F. Steele, Institute for the Future @ AACC (www.aacc.edu/future), and the six-week course will run from July 7 through August 12, 2008.

To sign up for FTR-100, section 840, students must register at Anne Arundel Community College in Arnold, Maryland, USA. Registrants must pay regular tuition and fees as well as course books plus a \$100 student conference fee (paid directly to the World Future Society after course registration). Students are personally and financially responsible for travel, lodging and meals to and from the conference. Additional information is available at http://www.aacc.edu/search/course/crs_sect.cfm?courseid=47978&termid=27

3. World Future 2008 – additional sessions of interest to educators

contributed by Susan Echard, Vice President, Membership and Conference Operations, World Future Society

The following additional sessions scheduled for "World Future 2008: Seeing the Future Through New Eyes" but not part of the Education Summit, will be of interest to edu-

cators and others interested in education (for updates or other additional details, visit www.wfs.org):

Ways of Knowing: Past, Present and Future

Father of the Oxford English Dictionary James Murray claimed knowledge is power and that knowledge was largely acquired through the voracious reading of books. Today, individuals in most OECD countries spend significantly more time on the Internet than reading books.

Evidence suggests that reading as a way of knowing is giving way to multi-media experiences. Video game designers routinely use literary devices and mythological archetypes, as well as images and sound to plot their interactive stories. Netspeak acronyms and nonverbal images (emoticons) are creeping into the lexicon of everyday speech.

As computers disappear into the fabric of daily life, information will be accessible on an instantaneous, as-needed basis. The increasing sophistication and portability of machines will reduce the necessity of securing knowledge into non-interactive repositories such as books. This session will highlight implications for developing the mind in an increasingly complicated accelerated, global society.

Lawrence Baines, professor, University of Toledo, Toledo, Ohio
Robert Baines, consultant, Admiralty Group, Mexico
Ryan Gilbert, writer, Monroe, Michigan

Special Event – Foresight Development in the Classroom and on the Web: Ideas for Educators

In the modern university, not only history and current affairs, but at least one course in Foresight Development (Futures Studies plus personal foresight skills practice) should be among the required undergraduate general education (GE) prerequisites for a bachelor's degree. This model was boldly pioneered by Tamkang University in the mid-1990s for Futures Studies, and was modified by ASF to include personal foresight skills practice, which we believe increases the attractiveness of FS/FD to academic departments and credentialing committees. In 2007 we exported the "Tamkang philosophy" to a leading technology university in the US (UAT in Tempe, AZ) (Open access course wiki:

<http://foresightdevelopment.wetpaint.com/>
 <<http://foresightdevelopment.wetpaint.com/ohttp://foresightdevelopment.wetpaint.com/>>). Come learn from our experience, and let's discuss how to take undergrad FD courses globally in coming years. If you have an MS or greater credential in Futures Studies/Strategic Foresight, you too can bring a required Foresight Development curriculum to your local university. Let's discuss how.

In the Web 2.0 era, online networking for futures students and futures educators has become a powerful new

tool for building foresight culture and practice. Come learn about the value ASF has received in establishing the Global Futures Network (<http://futuresnetwork.org> <<http://futuresnetwork.org/ohhttp://futuresnetwork.org/>>), an online resource directory and "network of futurist networks" (GFN Facebook, GFN LinkedIn, and ShapingTomorrow's Foresight Network on Ning). We'll consider how futures academics, professionals, and laypersons might better use these networks and establish their own, and briefly, where online foresight culture might go in coming years.

John Smart, president, Acceleration Studies Foundation, (<http://accelerating.org>), Mountain View, California

Future-Oriented University: How Tamkang University Brings Futures Studies to Lives

Tamkang University is not only the pioneer and driving force for futures studies in Taiwan, it is also the base of one of the most prominent futures studies programs in the world. Currently, all 20,000 undergraduate students are required to take at least one course of Futures Studies before receiving a bachelor's degree from Tamkang. However, we face ever-frequent resistance, indifference, and skepticism from leaders and bureaucrats on campus and from a society that is largely ignorant of or misinformed about futures studies. More and more, academics and laypeople alike are questioning the legitimacy of futures studies as a discipline within higher education. In this session we will share our experience in seeking internal and external support to sustain our presence as an independent department.

Chien-Fu Chen, director, Graduate Institute of Future Studies, Tamkang University, Tamsui, Taipei, Taiwan

Mei-Mei Song, assistant professor, Graduate Institute of Future Studies, Tamkang University, Tamsui, Taipei, Taiwan

Shun-jie Ji, assistant professor, Graduate Institute of Future Studies, Tamkang University, Tamsui, Taipei, Taiwan

2021 Vision for Elementary and Middle Schools in a Global Society

In 2021 U.S. elementary and middle school principals will lead learning communities that prepare students to be global citizens. Schools will become dynamic systems that use technologies to serve both individual needs and collaborative learning. The National Association of Elementary School Principals studied provocative changes that lay ahead for schools and principals and used their analysis to shape a 2021 vision for the profession. The Institute for Alternative Futures assisted NAESP in a comprehensive futures project that included scan research, provocative forecasts, scenarios, strategic issues and a vision and strategic framework. This panel will highlight the project's major findings and features a visioning exercise. Participants are invited to explore what

it will mean for other aspects of society if this Vision 2021 for elementary and middle school principals is realized.

Craig Bettles, Institute for Alternative Futures, Alexandria, Virginia

Elizabeth Carlson, assist executive director, Affiliate Relations and Special Programs for the National Association of Elementary School Principals, Alexandria, Virginia

Marsha Rhea, senior futurist, Institute for Alternative Futures, Alexandria, Virginia

Distance Learning: Coming to a Theater Near You

We will start where distance learning is today, explore technologies on the horizon, and cast light on technologies that are only the on drawing board or not yet even conceived. Parents seeking to communicate with their kids, business managers who must communicate with their associates, or world leaders and politicians facing demanding constituents should find these ideas very useful. Whether macro or micro, new methods of communication are emerging that reveal how today's methods of interactivity are only the first step in our new age of open ended multi-sided communications. Whether you learned from a blackboard or computer, today's rate of learning has surpassed the rate of scholarships. But over the next ten years, ideas yet conceived will be the norm in educating others, whether in the traditional school setting, corporate campus or anywhere in the world.

Adam Cohen, senior Web architect, The New York Law School, New York, New York

Stan Cohen, former president, Earth Society, New York, New York

Starting a Futures Institute: Topics, Tools and Tasks

A futures institute is a catalyst for change drawing on local resources to promulgate futures thinking, to develop leadership in the art of foresight, and to disseminate futures information and instructional expertise. As a vehicle to actively support the community, a futures institute provides local training opportunities grounded in the futures perspective and utilizing foresight tools and methodologies as well as sponsors futures-based community events. Several active models reflecting differing stages of developing a futures institute. Presenters will overview the key elements their futures institute while offering examples of successful strategies.

Lawrie Gardner, advisory team member, Institute for the Future at Anne Arundel Community College, Arnold, Maryland

Steven T. Henick, Director, Institute for the Future @ Anne Arundel Community College, stehenick@aacc.edu

Mark Horstmeyer, futuring initiative, Moraine Valley Community College, Palos Hills, Illinois

Margaret Lehner, futuring initiative, Moraine Valley Community College, Palos Hills, Illinois

Stephen F. Steele, professor of sociology and futures studies,

Institute for the Future at Anne Arundel Community College, Arnold, Maryland

Kay Strong, Initiatives for the Future, Bowling Green State University at Firelands, One University Drive Huron, Ohio

End of the Written Word

While school kids' reading and writing skills have fallen below grade level in many electronically-developed countries, their ability to communicate and access information using non-text technologies is clearly on the rise. Cell phones, video games, Ipods, MySpace, and YouTube are the IT (information technology) instruments of choice for not only young people, but for people of all ages around the world. Voice-driven email and voice-driven internet search (think Google Talk) are on the verge of replacing some of the last vestiges of digital text. And text messaging, with its unique grammar and spelling, seems to symbolize the de-volution of written language. Will we soon be using voice-recognition software to talk with our computers while our keyboards gather dust? Are we leaving the Age of Literacy behind and moving rapidly into the Post-Literate Age? Are we on a back to the future track to become a worldwide oral culture (again)? Is this a positive or negative!

What potential opportunities does this shift hold for the world's people? How will it affect traditional education and the 3 Rs (reading, riting, and rithmetic)? How will it impact world business and commerce, international relations, the arts, and human consciousness itself? Panelists will analyze these trends and address vital questions about the future of IT and our world.

Stacey Aldrich, deputy state librarian, California State Library, Sacramento, California

Les Gottsman, director, general education, Golden Gate University, San Francisco, California

William Crossman, founder, director, ComSpeak 2050 Institute for the Study of Talking Computers and Oral Cultures, Oakland, California

Change in a Digital Age: An Impetus for a Collaborative, Educative, Democratic Future

Technological advancement has always brought new jargon and new-fangled gadgets broader society. These terms and gadgets are becoming more than just fads or trends; they're converging with our everyday lives causing a corresponding--yet new--kind of accelerated change from the workplace to the home and everywhere in between.

By realizing the precursors, phases, and essential components involved in the dynamic, cyclical process of change in a digital age--including the recognition and tending to resistive forces, the identification and utilization of digital tools to facilitate change, and a continual assessment of the entire change process--individuals, groups, institutions, organizations, and communities will be better prepared for the transformations ahead.

Carrie Rathsack, assistant director, Bowling Green State University's Center for Teaching, Learning, and Technology, Maumee, Ohio

"Stealth" Future Studies in Higher Education

Even when you don't see "future studies" in the title of a college course, that's what students may be studying. This presentation uses current examples to illustrate how futures studies can be important components of graduate and undergraduate courses--of both traditional and outside-the-box offerings. The examples provide a jumping-off point for facilitated discussion of higher education courses and course components, examining participants experiences, plans, concerns, and options.

Kenneth L. Nichols, associate professor, University of Maine, Orono, Maine

Future City: Technology Education for the World

The Future City program is already building the future in engineering and the social sciences for middle school students in the United States, India and other countries. In the United States alone, 30,000 young people compete each year in teams to design the transport, energy, health, and commercial communities for the future. The teams build scale models and explain their innovative ideas in written and oral format.

Carol D. Rieg, national director, Future City, Alexandria, Virginia; board member, Maryland Transportation Authority, Gaithersburg, Maryland

Special Event -- Trends in Education: Implications for the Future

The social and economic changes sweeping our globe will profoundly influence education programs everywhere, especially in the developed world. While steady growth is expected in that sector for another five years, the ability of national and even local government to support quality education has been steadily declining. School populations are growing and changing rapidly, due to immigration and other forces, while schools struggle to keep up with demands for new technology training and resources. Finally, the complexities of a teaching career have discouraged many young adults raised on promises of material prosperity and abundant leisure time--neither of which are likely in the teaching profession--from becoming educators.

Marvin Cetron, president, Forecasting International, Inc., Falls Church, Virginia; author; member, World Future Society Board of Directors

This list is updated on a regular basis, and updates are available at www.wfs.org.