STRONG NATIONS, WEAK STATES, SINKING DEBTS and RISING OCEANS

Environmental Scan 2005

for

The Judiciary of the Commonwealth of Virginia

By

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INTRODUCTION

This is the fifth scan the Hawaii Research Center has prepared for the Judiciary of the Commonwealth of Virginia. The first was in 1994, and we have had the privilege of doing one roughly every two years since. As before, we have found that certain themes continue from year to year—some waxing, some waning, while others continue along their previous path. And, as before, we have found several important, new, or newly -emphasized developments during our recent scanning process.

Probably the most important development we have found is captured by the first half of our title to the 2005 Scan: "Strong Nation, Weak State". For almost half a century, following the end of the Second World War and especially following the election of Ronald Reagan in 1980, the "official view" of the future of the United States and the world (from the US perspective) was "Neoliberal globalization"—the belief that while the nation-state would persist and play many important functions, economic and other forces were knitting the world together into one big free trade zone. While some parts of the world (and some parts of America) might resist, the future belonged to those nations who freely traded with one another with no barriers hampering the global magic of the market place.

This is no longer America's official view of the world. Instead, from the very beginning of George W. Bush's presidency, and especially following the events of and reaction to 9/11, America has resorted to a kind and degree of religious-patriotism that most thought was dead and gone. Neither the title nor the very existence of the most recent national agency—the Department of Homeland Security—would have been imaginable before 9/11. Neither would the sweeping, rights-denying-in-the-name-of-national-security PATRIOT Act, currently under renewal as these words are written.

State functions are being reduced to military protection and internal policing utilizing massive surveillance systems. Bureaucratic institutions, such as the CIA, GAO, and FBI are losing their independence and coming under the direct control of political power. Freedom of information is being dismissed as we return to “need-to-know" as security is said to trump long-cherished rights. The White House and Pentagon have also recently approved of producing fake news reports and disinformation.

America also has proudly renounced a long series of treaties and multilateral agreements previous administrations had as proudly entered into. Only some of the more recent are mentioned in this scan. In their place, America has announced that it will act unilaterally, in is own national interest, and by overwhelming pre-emptive military force if necessary. While it may enter into agreements with current allies for immediate interests, it will no longer be hampered by vague, long-lasting, and crippling multilateral agreements that do not serve America's national interests.
But America's unilateral road to the future, now five years old, may be reaching a critical "tipping point" because of the maturing of another trajectory--the weak state.

In a way, America's default political slogan since the days of the American Revolution has been, "That government is best that governs least." While there have been times--such as President Franklin Roosevelt's New Deal--when an American kind of welfare state has become temporarily dominant--certainly since Reagan's presidency and even during the time of President Bill Clinton, the prevailing American political rhetoric is that the state is bad, and should be reduced in size, scope and power to a few residual functions. This would then allow individuals to take responsibility for themselves, while free-market economic forces perform whatever interactive functions free individuals may desire. This was most clearly the philosophy expressed by Newt Gingrich's "Contract With America", but almost all politicians and many voters supported the basic perspective, then and now, and actions based upon it.

As a consequence, the American state--meaning here the American national government--is rapidly approaching the weakened condition that the philosophy has sought. Taxes have been cut drastically so that the amounts of money flowing into the American government are reduced to a comparative trickle. At the same time, levels of federal debt are huge and growing without an obvious end in sight. So is America's trade imbalance with the rest of the world--especially with China. The fiscal demands of the few remaining federally-funded activities--primarily Medicare and Social Security--are also rising so fast that even normally short-sighted politicians have recently become concerned that something needs to be done to curb them. And, given prevailing philosophical predispositions, the most obvious thing to do is to divest programs from the responsibility of the federal government, thus allowing individuals the opportunity to take care of their own medical and retirement needs free from government interference.

Until recently, the philosophy also was to push decision-making and responsibility down from the federal level to the state and local level, but they also are enthralled by the same anti-state philosophy that determines federal actions, and so taxes have been cut locally while citizens are reluctant to pass bond measures or otherwise allow deficit spending. Thus in most places, services provided by local branches of government are similarly severely restricted.

The American state is not the only one to seem to be withering away. The process is also well underway in Europe, but for different reasons and with very different consequences. In Europe, nations that have engaged in bloody wars forever--including two world wars in the previous century--are now peacefully and quickly forming into something new under the sun--the European Union. The EU
is not intended to be a new super nation or state--each European nation is expected to continue, and some nations--such as Catalonia, Wales, and Scotland--currently included within a nation that they do not feel is their own--may be able to become nations within the EU in their own right.

For the most part, unlike the situation in the US, the European nation-states are still functioning to the satisfaction of their citizens--though each of them is also challenged by the same economic, demographic and environmental pressures facing the US. In Europe, states are freely giving up their powers to a "higher authority" in order to achieve the greater unity, peace, and freedom of movement that they hope the EU will bring. Similar developments are also underway (though it may be decades or longer before they reach the current EU stage) in South and Southeast Asia, especially.)

However, in the American case, the result of these two developments--a strong, militaristic nation determined to do its will externally but based on a weak and heavily indebted yet socially-intrusive state internally--presents America and the world with unique challenges. First of all, will Americans continue to be loyal to a nation whose state (and states) no longer provide(s) many services to them? Might they not turn their loyalties elsewhere. If so, where? If not, what will restrain them? And, second, will America have the ability to respond--as a nation or as individuals--to all of the many other challenges and opportunities racing towards it from the future?

Such as the possible end of the dollar as the global standard while foreign debtors demand that the US repay its many loans, and the rise of many environmental issues--global warming, abrupt climate change, sea level rise, the end of oil with no equivalent alternative energy source immediately evident, severe water shortages, the end of most commercial fishing, all capped by a population problem that now sees the percentage of the elderly and very elderly rising in almost every country. In some parts of the world, such as the United States, population still is rising. In other parts of the world--especially all of Europe, Russia, and Japan--the population is falling. Both present challenges to resources and governance.

All of these issues would seem to demand immediate and urgent attention, and they are receiving attention in most of the world. But the US federal and most state governments are ignoring them (often ridiculing them as insignificant challenges), or reacting to them by trying to shore up behaviors and institutions that made sense in earlier days, but may not any more.

At the same time, our scan clearly shows that some things we also have been tracking for some time--developments in robotics, artificial intelligence (AI), and nanotechnologies especially--are moving forward very rapidly. On the one hand, these may present solutions to some of the challenges listed above. But on the other hand, they will present new challenges of their own--for example, as robots
and AI continue rapidly to replace human mental as well as manual labor, erasing jobs forever with no alternative source of jobs clearly in sight.

Because we believe that diffused old and emerging new technologies are a major cause of social and environmental change, we devote a lot of space to them in this scan. Probably the most important "new" technology we discuss in some detail is in the area of neuroscience and brain technologies. Rapid advancements in understanding how the brain functions have the potential to re-define core beliefs about human existence and revolutionize social, economic, and political structures. A growing discussion of neuroethics has begun to address emerging issues of cognitive enhancement through drugs and implants, brain-computer interfaces, and legal issues stemming from brain imaging and other technologies.

We also focus on the rapid and recent role of interactive electronic games. While already a major player in the entertainment industry, we believe they may play a major role in the futures of all levels of education as well. We also are very impressed by the increased economic and cultural importance of "performance" and "shtick"--a development we noted in an earlier scan when we discussed a book by Ernest Sternberg called The Economy of Icons. Now we observe that an entire country, well-known for its ability to adapt and improve upon the best practices of the time--South Korea--is providing a significant amount of money and personnel for the production and export of popular culture of all kinds. We suspect that South Korea might be the first of many new "Dream Societies".

Until recently, one thing in which the United States was clearly the leader was higher education. Whatever could be said for a weak elementary and secondary system, American higher education was top class worldwide. Scholars and students from all over the world came to study or work at US universities. This gave the US tremendous influence in the other countries of the world when these scholars went home to teach or govern.

Not now. Since 9/11, the US has reacted with hostility towards foreigners, even those who clearly represent no violent threat to it, such as Canada or France--but especially China. Foreign student enrollment in US universities is significantly down. While it may rise again, it also may not as other countries--certainly in Europe, but more importantly also in Japan, South Korea, Taiwan, Hong Kong, Singapore, and even China and India aggressively seek students and scholars abroad. The combination of American xenophobia, new opportunities elsewhere, and the proliferation of highly successful virtual universities everywhere may signal the death knell of what was once America's virtual monopoly.

In addition, America's universities are being challenged from within as state funding declines drastically for all publicly-funded universities, while at the same time tenure and freedom of speech (inside and outside the classroom) continue to be eroded. Indeed, America's pre-eminence in science and technology may
be ending as fiscal restraints combine with doubts about evolution and physics that accord faith-based science funding equal to or exceeding that of secular science, and as concerns about the moral impacts of biotechnologies and nanotechnologies come to discourage further technological innovations in all areas.

Previous scans have emphasized age-cohort analysis, relying especially on the work of Strauss and Howe. In this scan we note that the long-anticipated "Millennial" generation is now dominant at all levels of undergraduate education in the US, and thus will soon be moving into the economy. Since—as an age-cohort, if not necessarily for every individual within it—they are so very different from both the Baby Boomers and especially Generation X, their immediate predecessors, it is very important for all employers, managers, and politicians to understand them. The Millennials stand poised either to accomplish things as great and grand as the "last great generation" of the GIs (who, like the Millennials, are also "Civics" in the scheme of Strauss and Howe), or they may become very obedient and talented sheep that a skillful dictator may lead willingly to slaughter.

There are other social features worth emphasizing. Even though same-sex marriage proposals were all defeated during the last American national election, there are many other indications that most Americans tolerate same sex behavior—or are utterly indifferent to it. It just doesn't matter to more and more (especially younger) Americans. Younger Americans also are largely indifferent to ethnic and often gender issues that wholly dominated the political and social landscape of their elders. Race and gender also just don't matter, for the most part.

The massive explosion of blogs has changed how people gather and disseminate information. Millions of erstwhile fact-checkers/commentators are continually pouring through the minutia of daily events and presenting them to fit the tastes of their (usually) like-minded readers. For better or worse, specialized and often heavily biased media communities replacing the common public arenas of the mass media. But the ability of the blogs to bring down some of the rich and famous where the mainline media have failed has also been demonstrated.

Finally, we note the clear emergence of "new humans" who are fully immersed in cyber culture. Their renowned ability to "multi-task" does not begin to capture the way they think and behave. The difference between "reality" and "virtuality" is now being blurred in ways futurists have long anticipated, but few others believed possible.

This, more than anything, will put all of the political, economic, and environmental issues we have mentioned above as being so salient—in varying ways—to current rulers into a very different perspective when Boomers retire and Millennials
emerge, overwhelming the far less-numerous (and self-consumed) Generation X for the next twenty years.

All in all, after a half-century of comparative stasis (and you thought there were a lot of changes going on then?) be prepared for substantially more social change beginning in the coming decade.
Prompted by an international tribunal's decision last year ordering new hearings for 51 Mexicans on death rows in the United States, the State Department said yesterday that the United States had withdrawn from the protocol that gave the tribunal jurisdiction to hear such disputes.

The withdrawal followed a Feb. 28 memorandum from President Bush to Attorney General Alberto R. Gonzales directing state courts to abide by the decision of the tribunal, the International Court of Justice in The Hague. The decision required American courts to grant "review and reconsideration" to claims that the inmates' cases had been hurt by the failure of local authorities to allow them to contact consular officials.

Darla Jordan, a State Department spokeswoman said, "We are protecting against future International Court of Justice judgments that might similarly interfere in ways we did not anticipate when we joined the optional protocol."

For 40 years, from 1946 to 1986, the United States accepted the general jurisdiction of the International Court of Justice in all kinds of cases against other nations that had also agreed to the court's jurisdiction. After an unfavorable ruling from the court in 1986 over the mining of Nicaragua's harbors, the United States withdrew from the court's general jurisdiction.

But it continued to accept its jurisdiction under about 70 specific treaties, including the protocol withdrawn from on Monday, said Lori F. Damrosch, a law professor at Columbia. The other treaties cover subjects like navigation, terrorism, narcotics and copyrights, and they are unaffected.

Clinton signed the Rome treating establishing the tribunal just before a December 31,2000 deadline for signatures expired, but President Bush's administration has vowed never to send the pact to the US Senate for ratification. Panama was the 59th nation to ratify the treaty. Once 60 nations do, the treaty
takes effect and a permanent war crimes court would be set up in The Hague, Netherlands.

**Public Sector Outsourcing**

Governments across the U.S. are considering ways to cut spending. One of these ways has been to privatize public sector labor and services. This process continues the perceived distancing of government from the public welfare and could have long-term effects on citizen loyalty to government.


Outsourcing, competitive bidding and privatization, although controversial, well may emerge as keys to bringing the state budget under control. Outsourcing, in particular, is likely to become popular on both sides of the aisle, as elected officials grapple with practical ways to control spending.

**U.S. and the World Order**


The United States is becoming ever more marginalized in a world that is willing to go on without it—or at least to ignore it.

“A new world order is indeed emerging - but its architecture is being drafted in Asia and Europe, at meetings to which Americans have not been invited.”

The U.S. by many is no longer seen as a “fair broker” in world affair. It is largely perceived to be only out to defend its narrow interests. A change in U.S. administration might ease this trend, but the conservative tenor of American politics and the new leadership arising in Europe and Asia point to further U.S. exclusion.
• Chadda, Sudhir “Russia and China become part of strategic alliance – Putin now looks at BRICS alliance (Brazil, Russia, India, China, South Africa)” http://www.indiadaily.com/editorial/1627.asp

Fears of U.S. hegemony have prompted nations to form new friendships and new ties. A new block - The BRICS alliance is forming. We could see covert wars in trade and finance on the horizon. If strengthened, this group would be an immediate equal to the U.S. and E.U.

• Wilson, Dominic and Roopa Purushothaman “Dreaming With BRICs: The Path to 2050” Global Economics Paper no. 99 www.gs.com

“Over the next 50 years, Brazil, Russia, India and China—the BRICs economies—could become a much larger force in the world economy. We map out GDP growth, income per capita and currency movements in the BRICs economies until 2050.

The results are startling. If things go right, in less than 40 years, the BRICs economies together could be larger than the G6 in US dollar terms. By 2025 they could account for over half the size of the G6. Of the current G6, only the US and Japan may be among the six largest economies in US dollar terms in 2050.

The list of the world’s ten largest economies may look quite different in 2050. The largest economies in the world (by GDP) may no longer be the richest (by income per capita), making strategic choices for firms more complex.”
Will China come to Iran's aid if the US strong-arms Iran? China and Iran have signed a mega gas deal worth one hundred billion dollars. The geostrategic developments not to mention the political and economic significance should not be underestimated.

In a bold move, Iran and Venezuela have threatened the U.S. with cutting off oil supplies if it continues with its threat to go after rogue states. The United States currently imports 15 percent of its oil from Latin America.

China and Russia have been wary friends for a few years but it looks as if their friendship has taken a new turn. Since 1991 they have built up their ties, in part to offset US military dominance. In 2005 they will hold their first military war exercise together.

See also:

Weapons and Wars


How General Tommy Franks joined Donald Rumsfeld in the fight to transform the military—from large armies in a few large bases, to a smaller army strategically placed around the globe. Rumsfeld wants an army that can follow a “swarm” pattern, forming quick strike action forces.
Postmortem on Preemption?


Bush's conception of preemption far exceeded responding to an imminent danger of attack. He instead advocated preventive wars of regime change. The United States claimed the right to use force to oust leaders it disliked long before they could threaten its security.

Bush's radical departure from past practice was based on two assumptions, both of which our experience in Iraq has shown to be flawed. The first was the belief that Washington would have access to reliable intelligence about the intentions and capabilities of potential adversaries. An enemy's society might be closed, but our modern spy technologies could pry it open. We could peer into secret weapons sites from on high and listen to conversations and other communications without being detected. Our intelligence would be good enough to warn us of impending danger.

Today, the doctrine of preemption has fallen on hard times. Far from demonstrating the principle's effectiveness, the Iraq war and its aftermath have ultimately underscored its limits.

Not being a man given to analyzing his missteps, Bush will not publicly bury the preemption doctrine he unveiled only two years ago. But all doctrines must eventually be measured against experience. And for that reason, Bush's doctrine of preemption is, for all intents and purposes, dead.

  [http://en.ce.cn/World/Americas/200503/19/t20050319_3367587.shtml](http://en.ce.cn/World/Americas/200503/19/t20050319_3367587.shtml)

Undersecretary of Defense Donald Feith said "early measures," or preventive measures, were a critical component of active, layered defense. "These are all actions that are taken to prevent problems from becoming crises, as I said, and crises from becoming wars," he said.

Feith said the term "preventive" is not the same thing as preemption, but he defended the pre-emptive policy adopted by the Bush administration. "Under the most dangerous and compelling circumstances, prevention might require the use of force," he said.
New Nukes

• Jackson Thoreau, "Nuke Syria," March 2, 2005
  http://www.counterpunch.org/thoreau03022005.html
• “Flirting with Armageddon: Welcome to a New Arms Race.” The Guardian.
  2/20/2005

Although the U.S. is admonishing other nations who are seeking nuclear weapons, it is pursuing an aggressive plan to expand its tactical nuclear weapons. President Bush’s 2006 budget includes an addition for bunker buster weapon and mini nuclear weapon development.

To wide applause at a church meeting, Republican Congressman proclaimed his policy to the President: “Syria is the problem. Syria is where those weapons of mass destruction are, in my view. You know, I can fly an F-15, put two nukes on ’em and I'll make one pass. We won't have to worry about Syria anymore.”


America’s nuclear policy is shifting dramatically as the administration intends to produce the Robust Nuclear Earth Penetrator, a full power hydrogen bomb that would throw up enormous clouds of radioactive dust and cause widespread death. This bomb is thousands of times more lethal than the traditional bunker buster. The Defense Dept. has initiated a design contest between Lawrence Livermore Laboratories and Los Alamos.

Other theaters

• Weiner, Tim “Pentagon Envisioning a Costly Internet War,” 11/13/2004

In late 2004, connections for the Global Information Gird or GIG were laid out. The goal? To give the U.S. military’s a moving picture of enemies and threats. Net-centric warfare will enable the military to be a ‘fiercer force against a faceless foe - fusing weapons, intelligence and soldiers in a global network –

Didn't the cold war end? Russia enters new stage of missile development. Scott Ritter argues that Russia's new Topol M ballistic missile has ended the U.S. dream of effective missile defense.


U.S. withdrawal from treaties is taking its toll already. Russia has successfully tested a modernized anti-missile missile, which defense analysts are interpreting as a direct response to the US withdrawal from the anti-ballistic missile treaty.


Glimpse of future wars? Who needs people when you have robots, robotic infantry support systems, drone ambulances called Valkyries, Spinners, and long-term mine reconnaissance systems.


750 of the top microbiological researchers have called on the Bush Administration to return the scientific focus to its proper place of pathogen research and away from war related rare viral research.

**Total Information Awareness**

Controlling information has always been essential to maintaining power. Attempts at freeing information are being met with technologies of control and an ideology of preemption. A variety of issues are emerging in information dissemination, surveillance, personal privacy, and environmental monitoring.
News... on the March

• “RUMSFELD: "STRATEGIC INFLUENCE" LIVES ON" Secrecy News
  November 22, 2002.

If you create an agency to disseminate disinformation then we are told it has been shut down, can you really believe it? When the Secretary of Defense says that it lives on without the name can you believe that? The Liar’s Paradox lives on.

“Defense Secretary Rumsfeld last week likened the brewing controversy over the Total Information Awareness program to an earlier dispute over the Pentagon's Office of Strategic Influence, which critics asserted -- erroneously, according to the Pentagon -- was created to engage in disinformation.

As a result of all of the negative publicity, the Office of Strategic Influence was shut down. Or maybe it wasn't. Rumsfeld said last week that only the name has been abandoned. The Office's intended functions are being carried out.

"And then there was the Office of Strategic Influence," Rumsfeld reminisced on November 18. "You may recall that. And 'oh my goodness gracious isn't that terrible, Henny Penny the sky is going to fall.' I went down that next day and said fine, if you want to savage this thing, fine, I'll give you the corpse. There's the name. You can have the name, but I'm gonna keep doing every single thing that needs to be done and I have."


Gen. Richard Myers, the chairman of the Joint Chiefs of Staff, has warned commanders not to mix up "information operations" with the dissemination of news to reporters. But some in the military are concerned about blurring clear distinctions among three goals: psychological operations against enemy forces, offering timely and accurate information to reporters, and influencing international audiences.

• “Pentagon to Broadcast to millions of homes,” Big News 2/25/2005
  http://feeds.bignewsnetwork.com

The Pentagon will disseminate news itself instead of controlling information. Pentagon Channel, public relations TV unit within Dept of Defense. Channeled through EchoStar Communication's Dish Network, which will offer Pentagon Channel to more than 11 million homes.
The White House sent memos out last week insisting "that it is legal for federal agencies to feed TV stations prepackaged news stories that do not disclose the government's role in producing them."

Those memos essentially overruled a Feb. 17 memo from Comptroller General David M. Walker. "This is more than a legal issue. It's also an ethical issue and involves important good government principles, namely the need for openness in connection with government activities and expenditures,' Walker said."

Pentagon is investigating allegations of hiring journalists to sway public opinion in the Balkans. Called information operations and writes articles to counter popular articles.

Terrorism has become a pretext for a new culture of secrecy.

Networks refuse to play anti-war advertisements paid for by Ben and Jerry.

In Russia, there's a new television channel to promote military prestige. Putin wants to cultivate sense of patriotism among Russia's youth.
Smart sensors/ smart environments/ smart governance?


Embedded sensors and linked smart environments will lead to “automatic law enforcement.” New laws will be downloaded into the environment in our cars, homes, and offices. These devices will “govern” our tools and therefore our actions. Paper laws with human enforcers will be replaced and preemptive deterrence will become more common.


The core idea of YRP Uniquitous Networking Laboratory's new project is to embed a number of RFID tags in public venues and use them to help people get around in a city. Pedestrians use handheld devices that gets information from RFID tags and say things like "You are at XXX in YYY town" "If you turn right, there'll be a train station..."

A major pilot test will start in April in the Japanese city of Kobe.

In relation to this effort they initiated a committee that will discuss so-called "Place Codes", which will bridge RFID tags' serial numbers and location information.

- Muir, Hugh “Coming to a bin near you, the spy that tells how much rubbish you create.” *The Guardian Unlimited Online*. February 11, 2005. [http://www.guardian.co.uk/online/story/0,3605,1410921,00.html](http://www.guardian.co.uk/online/story/0,3605,1410921,00.html)

Microchips are being inserted into garbage cans in Croydon, England so that the local council can tell if they are producing too much garbage. If so, they will be advised to “manage their rubbish more effectively.” This trend seems to converge with the movement toward “intelligent government” where laws will be enforced directly through technological manipulations.


"The plaintive plea to the traffic cop is the same the world over: "Sorry officer, I didn't know I was speeding." But drivers may soon have to come up with a better excuse. A new electronic driver's assistant will detect road signs and warn drivers
not to ignore them.

The Australian invention is part of a global effort to make drivers more aware of road signs, especially those concerned with safety. Eventually, GPS-based systems could entirely replace road signs, but until then, ideas like the new driver assistance system (DAS) developed at the National Information and Communications Technology Australia (NICTA) lab in Canberra may help.”

- Schneier, Bruce “Smart Water.” Schneier on Security Blog.  
- www.smartwater.com

Material that is applied to anything allows them to tracked back to the owner through forensic coding. Marketed as an anti-theft device. This could be seen as the 21st century version of licking something so no one else will take it. The only problem is that there doesn’t seem to be a way to keep people from tagging YOUR things and calling them their own.

- “Black boxes in cars: saviors or snitches?” AP Posted 6/23/03  

Ubiquitous and unseen surveillance devices are part of everyday life. “An estimated 25 million automobiles in the United States now have so-called event data recorders, a scaled-down version of the devices that monitor cockpit activity in airplanes. Like aviation recorders, automobile black boxes mainly receive attention after an accident.

What the devices record increasingly finds its way into courtrooms as evidence in criminal and civil cases, leading some privacy advocates to question how the recorders came to be installed so widely with so little public notice or debate.”


Follow that car. A new tech device – a small keypad in the car – requires drivers to punch in a code before their car will start. If car owners aren’t on time with their car loans, the car won’t start. 160,000 of these high tech devices have been sold and are sold primarily to independent auto lenders. The problem is this puts a lot of stress on buyers – they have to make car payments on top of their list or else.
Surveillance is not just for governments. Corporations and private interests are gathering more and more data on their customers and possible consumers. This information and how it is used has little formal oversight procedures. A rash of high profile information theft cases attest to the lack of measures in place and the possible dangers of personal information databases.


Privacy and legal issues of basing qualifications on genetic testing: Although insurance companies routinely use an individual's personal and family medical history to determine life insurance eligibility, rapid advances in gene identification and genetic testing are changing the way we look at genetic information. Should the results of genetic testing be available to life insurance medical underwriters?

- “Schneier on Security” December 2004

“And with alarming frequency, our data is being abused by identity thieves. The businesses that gather our data don’t care much about keeping it secure. So identity theft is a problem where those who suffer from it -- the individuals -- are not in a position to improve security, and those who are in a position to improve security don’t suffer from the problem.

The issue here is not about secrecy, it's about control. The issue is that both government and commercial organizations are building "digital dossiers" about us, and that these dossiers are being used to judge and categorize us through some secret process.”

**Smart Dust/RFIDs**

- From Douglas Rushkoff's New School for Social Research Fall 2004 Theoretical Perspectives Course on Emerging Technologies
  [www.rushkoff.com/class](http://www.rushkoff.com/class)
"Smart dust' sensors are close to becoming a reality. Developments in ad-hoc networking, miniaturization of radio chips and RFID tags, nanotechnology, genetic engineering, quantum computing, and the growing desires of both government and public for smart technology to augment virtually every aspect of reality all tend towards a future in which the equivalent physical space of a bit of information is reduced to the atomic scale or less."


Adopting a cutting-edge--but highly controversial--technology that is just beginning to emerge in schools, the only grade school in the rural town of Sutter, CA., is requiring students to wear radio-frequency identification (RFID) badges that can track their every move. Some parents are outraged, fearing it will take away their children’s privacy.

- Empire North “ID Sniper” http://www.backfire.dk/EMPIRENORTH/newsite/products_en001.htm
- http://rfidanalysis.org/

The Internet was abuzz in 2004 about a gun that purported to secretly and painlessly fire an RFID marker under the skin of a person/suspect. This was to be used as a way to track suspects and help law enforcement activities. This advertisement was uncovered as an (apparent) hoax, but it aptly illustrates two growing trends: One is the increasingly sophisticated techniques for surveillance and tracking, and two is the belief by a large portion of the world that governments would be willing to use these technologies.

- “China to implant ID chips in pandas.” March 19, 2005
"Information about pedigree, age and other basic data will be permanently incorporated into the giant pandas by ways of molecular labeling or hypodermic implantation of sensing chips," Xinhua on Saturday quoted a State Forestry Administration official as saying.

FIFA is planning to test a special device involving a microchip sensor inside the ball next month as a possible solution to goal-line disputes during matches.

A soccer ball containing a microchip will also be used in this year’s under-17 world championship games. This ball will transmit a signal when it crosses the goal line to a watch-like device on the wrist of a referee, which will either vibrate or beep.

Global monitoring

With an array of monitoring satellites and earth, sea, and sky sensors all over the world, the planet has been transformed into a vast information generator.

“The Earth and our effects on it require monitoring and analysis worthy of their complexity and importance. Now is the time to bring global observation into the twenty-first century.

Last week, ministers from some 60 nations gathered in Brussels to create an integrated Earth observation system, the Global Earth Observation System of Systems (GEOSS). December’s tsunami in the Indian Ocean has catapulted GEOSS from relative obscurity to high on the international political agenda. This was clear from the presence of Carlos Gutierrez, the US commerce secretary, on his first overseas visit since being sworn in on 7 February, as well as science ministers from around the planet (see page 789).

The tsunami disaster highlighted the power of Earth observation data, but it has also thrown a harsh spotlight on the patchiness and rudimentary nature of current systems for understanding complex Earth systems and applying that knowledge to agriculture, management of water resources, early-warning systems for natural disasters, and more.”
Internet for all?


Totalitarianism and ad hoc justification is always more pronounced when we see it somewhere else. In this case, we see the fear free information causes for the Chinese government.

“Chinese authorities say they have shut down more than 8600 unlicensed internet cafes in the last three months in their latest campaign to bring the communication channel under tighter political control.

Preventing anonymous access to the internet from cafes has been one prong of Beijing's drive to remove the political power of the internet for the past 18 months, although the excuse has always been the fire risk and protecting juveniles from abuse.”

- “West Hollywood Provides Free Wi-Fi”. Posted January 13,2005 
  http://www.socaltech.com/story/0001430.html

The city of West Hollywood is providing free internet access to the residents and visitors through wireless high-speed set up between Santa Monica Blvd and La Brea and Fairfax Avenue. This is an opportunity for people who may not be able to afford it to stay connected to what is happening out side of there known area.

Information Aggregation—Prediction Markets


As we mentioned in our last scan, what are called prediction markets, idea futures, or information markets continue to grow in size and complexity. These markets purport to be more accurate predictors of events through aggregation of information. Systems of payoffs and rewards are tied to correct predictions and the likelihood of events is based on what the “market” thinks will happen. These markets have been shown to outperform such traditional predictive methods such as polling and ay ultimately replace many of these methods.

- “DARPA bets” BBC News July 29, 2003 
  http://news.bbc.co.uk/1/hi/world/americas/3106559.stm
The U.S. Defense Department's Defense Advanced Research Projects Agency (DARPA) has plans to set up an online Policy Analysis Market that will allow traders to bet on the likelihood of future terrorist attacks and political assassinations in the Middle East. The bizarre scheme has drawn fire from Senators Ron Wyden (D-Ore.) and Byron Dorgan (D-N.D.). "The idea of a federal betting parlor on atrocities and terrorism is ridiculous and it’s grotesque," said Wyden, while Dorgan described the plan as "useless, offensive and unbelievably stupid. How would you feel if you were the King of Jordan and you learned that the U.S. Defense Department was taking bets on your being overthrown within a year?"

However, the Pentagon defended the initiative, comparing it to commodity futures markets. "Research indicates that markets are extremely efficient, effective and timely aggregators of dispersed and even hidden information. Futures markets have proven themselves to be good at predicting such things as election results; they are often better than expert opinions." The market would allow traders to deposit money in an account and then use it to buy and sell contracts. If a particular event comes to pass, the bettors who wagered correctly would win the money of those who guessed wrong.

**Crime and Law**


Over the past 20 years Congress has encouraged the U.S. military to supply intelligence, equipment, and training to civilian police. That encouragement has spawned a culture of paramilitarism in American law enforcement.


The number of major crimes in the US increased in 2001 for the first time in a decade, bringing an end to a decline violence that had resulted in the lowest crime levels in a generation." "The reversal comes amid budget pressures on many local departments because of rapid declines in taxes revenues collected by state and local governments. "Surges in the numbers of teens and released prisoners, along with recent economic declines, threatened a return to rising crime."
Prisons

- Ove, Torsten “Pa. prison population growing older, sicker, costlier” Pittsburgh Post-Gazette March 6, 2005

Prisons like this one have become common as the 1.3 million people behind bars in America grow grayer each year.

In 1990, there were 33,499 prisoners in state and federal lockups who were 50 or older; by 2002, that number was about 125,000, according to "Aging Prisoners: Crisis in American Corrections," a 2003 book by Tennessee college professor Ronald Aday.

As this trend builds momentum, so does the debate both inside the world of corrections and among lawmakers and academics about whether the country should continue to keep so many of its old prisoners locked up.

The cost of taking care of them is high and climbing.

At SCI Laurel Highlands, considered a model facility, the cost for one of the 111 inmates who need 24-hour nursing care is about $62,000 a year, nearly three times the cost for a regular prisoner.

All of which raises the question: Is it time to let at least some of these inmates go? Many experts say yes.

Photo by Steve Mellon Post-Gazette

The growth of the US penal system over the past 25 years has significantly altered the role of government in poor communities. After half a century of stability in imprisonment, the US incarceration rate increased every single year from 1975 to 2001. The prison incarceration rate rose from 93 to 470 per 100,000. 90% of inmates are male, most are under age 40, blacks are seven times more likely than whites to be in prison, and nearly all prisoners lack any education beyond high school. Although less than one percent of the population was incarcerated in 2001, 10% of black men in their late twenties were in prison. Incarceration is a pervasive event in the lives of poor and minority men. Punishment has become normal, affecting large social groups rather than distinctive deviants. Also, the time spent in prison increased by 25% in the 1990-98 period. Large pools of former inmates with few social supports, family attachments, or economic opportunities (and in many states, stripped of the franchise forever) may ultimately increase crime rates more than they were lowered by the expansion of the penal system.

See also:

Courts and Computing


Lawyers, judges and jurors could soon explore crime scenes in three dimensions in the courtroom, in the same way that video gamers explore virtual worlds.

Software called instant Scene Modeler (iSM) re-creates an interactive 3D model from a few hundred frames of a scene captured by a special video camera. Users can zoom in on any object in the 3D model, measure distances between objects and look at scenes from different angles.

Currently investigators try to recreate the scene of the crime in court by sifting through photos or sketches, but this approach is limited and time-consuming, explains Piotr Jasiobedzki, iSM’s project manager at MDRobotics in Toronto, Canada. The software could also assist detectives during their investigations.

"This is the first time this kind of technology has been applied to solving crime," says Linda Shapiro, a computer vision researcher at the University of
Washington in Seattle. A police force in Canada is currently testing the technology.


Computer scientists at DePaul University have developed an artificial intelligence system for crime solving that compares records for cases with all the files on past crimes, looking for telltale similarities in crime records and alerting detectives when it finds them. The system uses pattern-recognition software to link related crimes.

**Lawyer-Bots**


Mark Rasch, founder and former head of the U.S. Justice Department's Computer Crimes Unit, says that the increasing trend toward lengthy, tiny-font policy "agreements" that users must click on before they can access a Web site are generating the need for more legal oversight. "Increasingly, companies have been putting some pretty nasty things into their clickwrap agreements -- such as that they can collect and sell your detailed personal information or install software that will capture your every keystroke. This is not legal boilerplate, the kind that everybody assents to when renting a car or buying a ticket to a ball game. It affects the privacy, security, and operability of all of the information you access online."

Rasch says what's desperately needed is a law robot -- "a browser-based automaton that could be adjusted to match your tolerance for legal mumbo-jumbo. Once you establish privacy settings, your browser would transfer personal data (after prompting you) only to sites that conform with your privacy requirements." Rasch says such technology would go a long way toward eradicating such online nuisances as porn spam and spyware. "We will never fully automate the reading of contracts or agreements online. Nor would we want to -- after all, Internet lawyers need jobs, too. But by automating the vetting of clickwraps or implied agreements we could make everybody sleep a little easier."

**Unusual DNA Criminal Evidence**

Law enforcement officials have charged a Uniontown, Pennsylvania man of killing a hunter seven years ago and stealing a deer the hunter had shot. The killer's only mistake was to take the deer and put it in his freezer. "They're claiming that I shot him and took his deer," the man told his wife in disbelief. He insists that he is innocent. Police searched the man's house in March 1998 and took venison from his freezer, which they matched it with deer entrails found near the victim's body and deer blood on his hunting pants. Investigators believe it's the first homicide case involving deer DNA.

Knife-Resistant Clothing for Kids

- Email to World Futures Studies Federation listserv from mbowman@globalforesightinc.com Date: Sat, 24 Jul 2004

TOKYO (Reuters) - They may not look cool, but knife-resistant kid's sweatshirts and coats are the latest products aimed at providing parental peace of mind in a Japan horrified by a series of gruesome attacks on children.

The sweatshirts, and coats that look like plain waterproofs, are made from the same fibers used in police and military knife-proof and bullet-proof vests, according to the maker, Madre. "We created this product so children would be ok, even if they went off to play by themselves," said a spokesman for Madre, a provider of child day-care services before it added protective clothing to its portfolio earlier this year. The clothing, sold only through the company's web site, www.defense.to, isn't cheap, at 46,095 yen ($419) for the coat and from 40,950 yen for the sweatshirt. They come in 12 colors and can be embroidered with initials or other slogans. Japan has always prided itself on its low crime rate, but concern over child safety has grown after a series of crimes involving children.

Rights

As countries become more multi-cultural, multi-lingual and multi-religious, new legal challenges and clashes arise between the host national culture and the immigrant one. Thus far, the national culture has prevailed. This can have further implications in countries with low fertility rate and looking into immigration as a source of workers.

- If Only We Were More Like the French
  http://www.guardian.co.uk/0,6961,,00.html
- http://www.guardian.co.uk/comment/story/0,,1402176,00.html
The ban on religious symbols in French schools is only part of a broader policy of laïcité (secularism), which stems from a French revolutionary tradition. The aim has been to create a secular public space where individuals renounce part of what she calls their “personal particularity”, while the right to religious expression is guaranteed in their private lives. A flourishing multicultural society, the French insist, needs spaces where different races and religions can meet as equals.

- “Italy: The Energy of Outrage As Economy Falters Women Made to Blame”
  www.msmagazine.com/summer2004/italyblameswomen.asp

A Somali physician practicing in Florence has proposed an alternative to female genital mutilation (FGM) practiced in some immigrant communities. He administers a “pinprick” on the girl’s clitoris “to draw blood as symbolic cutting,” or “soft infibulation,” so that “both the girl and the tradition can be saved.” Outrage to his so-called alternative has been overwhelming, from both immigrant and Italian women. A bill is pending in Parliament that would criminalize all FGM practices in Italy.

E-voting and E-government


Johns Hopkins University experts say that high-tech voting machine software from Diebold Election Systems has flaws that would let voters cast extra votes and allow poll workers to alter ballots secretly. Aviel D. Rubin, technical director of the Information Security Institute at Johns Hopkins, led a team that examined the Diebold software, which has about 33,000 voting machines operating in the United States. Adam Stubblefield, a colleague of Rubin’s, said that "practically anyone in the country -- from a teenager on up -- could produce these smart cards that could allow someone to vote as many times as they like." Diebold has not seen the Institute’s report and would not comment on it in detail, but a company spokesman said: "We're constantly improving it so the technology we have 10 years from now will be better than what we have today. We're always open to anything that can improve our systems." Peter G. Neumann, an expert in computer security at SRI International, said the Diebold code was "just the tip of the iceberg" of problems with electronic voting systems.


A US electronic voting system, which sparked alarm in July when experts
suggested it could subvert an election outcome, has been given the go-ahead.

Faulty software underpinning a touch-screen voting system used in past US elections has been revamped substantially and will be used by Maryland voters in the next US elections, says a report published by the Governor's Office of Maryland on Wednesday.

But the lead researcher on the original study showing that serious bugs in the software might allow one person to cast many votes, was skeptical.

Avi Rubin at Johns Hopkins University maintains that by continuing to use the software - the Diebold AccuVote Touch Screen Voting System - American democracy remains jeopardized.

However, Shareese DeLeaver, a spokeswoman for the governor of Maryland, says: "We have reduced and eliminated many of the vulnerabilities previously associated with the Diebold machines."


The tiny U.S. Election Assistance Commission (EAC), whose mandate is to supervise the use of electronic voting machines in the U.S., claims that it is seriously under-funded and can’t be expected to forestall widespread voting machine problems. EAC director DeForest B. Soaries Jr. says: "We've found some deeply troubling concerns, and the country wants to know the solution... If you look at the evolution of voting in America, only in last four months has there been a federal agency whose exclusive focus is to deal with voting. It's the foundation of our democratic structure on one hand, but on the other we've really left it to the states to manage completely." Kim Alexander, president of the California Voter Foundation, comments: "I wish the EAC luck, but oversight of these systems is illusory. As long as federal voting system standards are voluntary, voters across the country will not have the peace of mind they need to feel confident in their voting systems."

Clash of Fundamentalisms

Leadership

The 2004 U.S. Presidential Election solidified a growing trend in American politics: that it is better to be wrong and unapologetic, than it is to change your mind. This signals an ominous inflexibility and rewards ideological blindness.

“A year ago the worst thing leaders could do was lie. Today, it seems, the worst thing they can do is change their minds. Indeed, no idea has gained greater currency recently than that flip-flopping is the ultimate failure of leadership.

That is worrisome, because leaders must be able to flip-flop without fear. Flip-flopping is not the same thing as indecision- roughly, the inability to arrive at a choice. Rather, it means altering a stance after a choice has been made. Changing course is simply the right move in some circumstances.”

- Sharlet, Jeffrey "Jesus plus nothing." Harper's Magazine, March 2003, pp.53-63

A report on meetings with America's secret congressional theocrats.

Values

- Price, Gilbert “Who’s Moral Values?” Call and Post November 18-24, 2004 Vol.88, Iss. 47: pg. 6A

Bush-brand fundamentalism has completely captured the “moral” debate in America. The religious right overwhelmingly supports regressive and morally questionable policies, if backed by the Bush administration.

“Bob Riley is a lay Baptist minister, the governor of Alabama -- and a conservative Republican. So it shouldn't have been surprising last year when Riley pitched a transformation of the state's antiquated tax system -- which began taxing the state's wretchedly poor citizens on incomes of $4,600 per year, but left major sources of revenue, such as the state's timber barons, off-limits -- on religious terms.

It was wrong, the governor said, for the state's poor citizens to pay such a heavy tariff on their meager salaries, while wealthy industries were not adequately taxed. It was wrong for Alabama children to fare so poorly in public education, seeing their dreams killed for a lack of adequate funding. It was wrong to have too few resources to take care of the elderly, the sick, the broken.

And guess what happened to Riley's tax reform -- which included a tax increase? It was overwhelmingly rejected by the religious voters of Alabama, by a two-thirds vote.
Evangelical Christians are crowing right now, as they have staked a claim -- a claim backed up by the highest levels of the Bush political team -- to being the source of victory for the president in the recent election."


President Bush's victory, the approval of every anti-gay marriage amendment on statewide ballots and an emphasis on 'moral values' among voters showed the power of churchgoing Americans in this election and threw the nation's religious divide into stark relief.


Rupert Murdoch's Fox News Network may have drummed up Red-State support for the War, but his Fox television programming--for example, Paris Hilton and Nicole Richie in "Simple Life"--is right out of Blue culture.


The new silent majority is a coalition waiting to be galvanized. It is not a 'victimized' collection of religious conservatives focused on a narrow cultural agenda. It is a broad, moderate-to-progressive majority focused on social and economic justice issues and the War in Iraq. These voters long to be talked to and mobilized around a more progressive, value-laden vision of America.


Religion is much more important to Americans than people in other wealthy countries according to an international poll by the Pew Research Center for the People and the Press. The US is more spiritually akin to many developing nations. Religiosity in the US was exceeded by that in all ten Africa nations, six in Latin America and six in Asia. Senegal was the most religious country while France and the Czech Republic were the least. 59% percent of Americans said religion was very important in their lives, while only 30% of Canadians, 33% of British citizens, and 27% of Italians said the same.
Religion didn't begin to wither away during the twentieth century, as some academic experts had prophesied; far from it. And the new century will probably see religion explode—in both intensity and variety. New religions are springing up everywhere. Old ones are mutating with Darwinian restlessness. And the big 'problem religion' of the twenty-first may not be the one you think" (it will be Christianity taken over by faithful in Africa and Asia).

Poll of 44 nations by the Pew Research Center for the People and the Press shows that few other people view the world as the US does.

End-times Politics

"Much could be at stake here. If the president thinks the Rapture is coming soon, as many critics think he does, why should he worry about pesky problems like the federal deficit, global warming, alternate energy sources, or achieving a two-state peace solution to the Israeli-Palestinian conflict? Among other things, dispensationalists believe Israel must be an undivided state for the Second Coming to occur. Could this explain the administration's reluctance to criticize Israel's expansion of Jewish settlements in the occupied West Bank? Some of the president's foes think so, and have even accused him of attempting to trigger the Final Days by attacking Iraq."

In late 2004, a survey by Cornell University revealed that 44% of Americans like the idea of some restrictions on the freedom of Muslims because of their religious beliefs. 25% of our fellow Americans think that Muslim Americans should be required to register their locations to the Government. Most of the respondents are either highly religious and/or supporters of the Republican Party.

Cause and Effect

"America's war on itself: Bush's wrecking tactics over
The U.S. has in recent history armed both Osama Bin Laden and Saddam Hussein, and weaponized anthrax that was used against its own citizens. It appears many of the current administration’s plans may create more of the problems they are purporting to solve. Even though a leaked Pentagon report indicates global warming is a greater threat to national security than terrorism, Bush appears to be incredulous.

"No one can say with any certainty," Bush asserts, "what constitutes a dangerous level of warming, and therefore what level must be avoided." As we don't know how bad it is going to be, he suggests, we shouldn't take costly steps to prevent it. Now read that statement again and substitute "terrorism" for "warming". When anticipating possible terrorist attacks, the US administration, or so it claims, prepares for the worst. When anticipating the impacts of climate change, it prepares for the best. The "precautionary principle" is applied so enthusiastically to matters of national security that it now threatens American civil liberties. But it is rejected altogether when discussing the environment.”


Not only does he argue that terrorism does not necessarily have anything to do with Islamic culture; he also insists that the spread of terror as a tactic is largely an outgrowth of American cold war foreign policy.

"The real damage the C.I.A. did was not the providing of arms and money," he writes, "but the privatization of information about how to produce and spread violence (the formation of private militias) capable of creating terror." The best-known C.I.A.-trained terrorist, he notes dryly, is Osama bin Laden.

L’age Noir


More and more scientists are protesting against the Bush administration’s perceived assault on science and scientific knowledge. Strategic cuts on controversial cutting edge research and the general antipathy to basic scientific knowledge about the world has many scientists forecasting the decline of American innovation and scientific dominance.
The United States is losing its global dominance in science and innovation, with fewer prizes being awarded to Americans, fewer papers in major professional journals, and fewer patents.

A Pennsylvania high school has just become the first in the country to discuss an alternative Darwin's theory of evolution in class, called Intelligent Design. The theory argues that because humans are so complex, there must be some unknown, architect responsible. Critics say it is a back-door to introducing the story of the creation and because it has no empirical basis it does not belong in science classes.

The fast track continues as the House has voted overwhelmingly (389 to 38) in favor of the Broadcast Decency Enforcement Act of 2005. The Act now moves to the Senate for consideration where it is likely to be voted through quickly, before heading to a conference committee, where the language of the House and Senate versions of the bill will be reconciled. Attempts at similar indecency acts stalled out in conference committee late last year due to additional legislation that was attached to it. Once the language is revised a final version of the Broadcast Decency Enforcement Act of 2005 will be voted on by the House, then the Senate, before heading to the White House for President Bush's signature. Indecency fines levied on broadcasters and performers would be from 32,500 to 500,00 with no warnings handed out for first offense.

The Bush Administration has shifted massive funds from state-based social services to faith-based groups. This public funding has the chance to change the
perception of religion in American life. If government is associated with a particular religion, then anti-government sentiment crosses over into religious animosities.

- Monkerud, Don “Bush Commits Government to Support Religion” March 4, 2005
  http://www.smirkingchimp.com/article.php?sid=20156&mode=nested&order=0

In 2005 President Bush reaffirmed his commitment to erode barriers against religion in government-supported programs. Funding has increased in last year to two billion, which is going to 600 religious organizations.

- Farris, Anne “State Faith-Based Initiatives Draw Mixed Reactions” The Roundtable on Religion and Social Welfare Policy Mar 22, 2005
  www.religionandsocialpolicy.org/news/article_print.cfm?id=2509

At a time when President George W. Bush is urging governors to expand their partnerships with faith-based social service providers, several states are finding mixed receptions and, in some cases, legislative and legal roadblocks to such initiatives.

In Michigan, Governor Jennifer Granholm last week joined the growing list of states that have created faith-based offices or liaisons. Some religious leaders applauded the move, saying it will help expand government welfare service dollars to the faith community. But the announcement also sparked objections from advocates of separation of church and state, who claimed the initiative could promote religion and violate the federal and state constitutions.

Lynn also said there is more objection to faith-based initiatives at the state level because, unlike at the federal level, it is easier for people to see where limited state resources are going, and which groups are getting the money.

But shrinking state budgets are the very reason why some governors are endorsing faith-based initiatives. With severe budgetary constraints, states are looking to leverage the work of faith-based and community organizations in areas of substance abuse, foster care, senior citizen care, homelessness, mentoring and prison inmate retraining.
The official rate excludes people who have given up looking for a job, and doesn't account for part-time workers who cannot find fulltime jobs or multiple-job holders who get laid off of one job.

The fallout from a dreary economy, corporate scandals and three straight years of stock market losses hasn't put much of a dent in executive paychecks.

America's ballooning trade deficit may be the worst economic problem we face--and no one wants to talk about it.
US deficit with China also set a record of $162 billion, up 30.5% from last year, and the largest imbalance ever recorded with a single country.

- Fram, Alan ”Group calls on Bush to hike taxes,” The Honolulu Advertiser, March 6, 2003, p. A3

A group of business and academic leaders warned Bush and Congress to abandon plans for fresh tax cuts and focus instead on long-term budget-balancing.


The United States is now engaged in its greatest age of consumer spending - longer and more intense than the splurge after World War II, when Americans rushed to acquire all the merchandise denied to them during the Depression and the war.

That postwar surge in consumption, a pent-up response to years of unemployment, then rationing, subsided in the early 1950’s. Not until the late-1980s did the nation - encouraged by market bubbles - once again devote three-quarters of its national income to consumer spending.

But this time, the pent-up demand has intensified rather than dissipated, and the global economy trembles from the stress.

- "Consumer debt has jumped nearly 30% since '98" Honolulu Star-Bulletin, March 6, 2004, p. C2

Despite the attacks of September 11, 2001, and two subsequent wars, despite a recession in 2001 and the resulting loss of 716,000 jobs, US consumers haven’t stopped spending and piling on debt. In fact, consumers have increased spending for 48 quarters starting, an incredible streak. That long run has been fueled, in part with $2 trillion in credit-card, auto and consumer debt and another $7 million in home mortgages. Since 1998, consumer debt, not counting mortgages, has increased 29.8%. The disposable income available to service that debt has risen on 14.5 percent in contrast. "Something has to give."
Debt Dangers

- Arends, Brett “Economic `Armageddon' predicted” *On State Street* November 23, 2004

Stephen Roach, the chief economist at investment banking giant Morgan Stanley has a public reputation for being bearish, but you should hear what he's saying in private.

Roach met select groups of fund managers downtown last week, including a group at Fidelity. His prediction: America has no better than a 10 percent chance of avoiding economic `armageddon.'


With its rising budget deficit and ballooning trade imbalance, the United States is running up a foreign debt of such record-breaking proportions that it threatens the financial stability of the global economy, according to a report released Wednesday by the International Monetary Fund. Prepared by a team of I.M.F. economists, the report sounded a loud alarm about the shaky fiscal foundation of the United States, questioning the wisdom of the Bush administration's tax cuts and warning that large budget deficits pose "significant risks" not just for the United States but for the rest of the world.

- Wood, Barry “US Rejects IMF Warning that Debts Could Affect Global Economy” *Voice of America News*, 04/01/08

“A Treasury spokesman dismisses the IMF report as breathless hyperbole. The IMF says the $500 billion U.S. fiscal deficit (...) could undermine the world recovery.

Treasury Secretary John Snow acknowledged Wednesday that the growing fiscal deficit is a problem. But he promised to cut the deficit by half within five years. "The war in Iraq: It is a one-time thing. But it had to be dealt with. Afghanistan had to be dealt with," he said. "But they created a bulge in [government] spending. And then we had the tax reductions."

Increased dependence on credit may trump oil as the number one dependency in the United States. Recent structural changes in the economy - the federal government's shift from surpluses to huge deficits, the national predilection for consumption over saving and housing prices that climb faster than incomes - have increased the country's reliance on another kind of fuel: credit.

Levey, David H and Stuart S. Brown “The Overstretch Myth" Foreign Affairs March/April 2005

The United States' current account deficit and foreign debt are not dire threats to its global position, as would-be Cassandras warn. U.S. power is firmly grounded on economic superiority and financial stability that will not end soon.

In a series of recent papers, economists Michael Dooley, David Folkerts-Landau, and Peter Garber maintain that Asian governments--pursuing a "mercantilist" development strategy of undervalued exchange rates to support export-led growth--must continue to finance U.S. imports of their manufactured goods, since the United States is their largest market and a major source of inward direct investment. Only a fundamental transformation in Asia's growth strategy could undermine this mutually advantageous interdependence--an unlikely prospect at least until China absorbs the 300 million peasants expected to move into its industrial and service sectors over the next generation.

Weakening Dollar


The dollar, after rising sharply in value for years, in a reflection of American economic might, is weakening markedly, mirroring concern about the fragility of the economic recovery and the nation's financial condition. The decline could continue for some time, analysts say.


Many foreign banks consider moving to other types of currency.

Dream Society/The Icon-omy
The Korean Government is pursuing a policy to increase and widen its support of the "culture industry." Entertainment, art, music, sports, and other forms of creative content will be the drivers of the next economy. Production, Industry, and now information have become so efficient (or this labor can be done cheaply in other countries) that

Pink, Daniel H. “Revenge of the Right Brain: Logical and precise, left-brain thinking gave us the Information Age. Now comes the Conceptual Age - ruled by artistry, empathy, and emotion.” Wired Issue 13.02 - February 2005
http://www.wired.com/wired/archive/13.02/brain.html?tw=wn_tophead_6

“Until recently, the abilities that led to success in school, work, and business were characteristic of the left hemisphere. They were the sorts of linear, logical, analytical talents measured by SATs and deployed by CPAs. Today, those capabilities are still necessary. But they’re no longer sufficient. In a world upended by outsourcing, deluged with data, and choked with choices, the abilities that matter most are now closer in spirit to the specialties of the right hemisphere - artistry, empathy, seeing the big picture, and pursuing the transcendent.”

Right-Brain Education


More and more students are turning to creative media not with the intention of making a career as artists, but to communicate in a world increasingly geared toward visual and multi-media. Business and politics is moving away from written communication to images and visual media. Semiotics is the new business code.


In London Einstein day is celebrated with bicycle stunts, rap music and modern dance since they are all spin off or direct applications of physics in our lives.
Right Brain Applied: Design for Increased Energy Awareness

- http://www.tii.se/static/research.htm

STATIC! investigates interaction design as a means of increasing our awareness of how energy is used and for stimulating changes in energy behavior. Revisiting the design of everyday things with a focus on issues related to energy use, we are developing a palette of critical design examples - prototypes, conceptual design proposals, and use scenarios. These will be used a basis for communication and discussion with users and designers, for developing a more profound understanding of energy is design, and to support awareness of design issues related to energy use early in the product development process.

STATIC! explores design of meaningful presence for energy in daily life by:
+ making energy visible and tangible to all senses
+ expressing the relations among different forms of energy used
+ supporting reflection on the energy behaviors over time

STATIC! explores design that might empower users by
+ increasing and articulating individual choices with regards to energy use
+ supporting recognition, comprehension and a sustainable perspective
+ enabling people to understand and take control in their home environment

Disappearing-Pattern Tiles

"Heat is a form of energy that is often taken for granted, invisibly escaping from appliances, boiling water, lamps and radiators. Energy lost through heat may be visualized if artifacts communicate leakage in various ways. In the example ‘Disappearing-Pattern Tiles’, bathroom tiles are decorated with patterns in a thermo-chromic ink that reacts to heat, fading away to reflect splashes and intensities of hot-water use. The longer the shower, the less decoration on the wall! The architectural surface acts as a subtle reminder of personal energy use over time, reflecting the duration and waste of water during a shower."

Creativity Gap

“To keep its competitive edge, the U.S. has to invest more in the development of its creative sector, which will lead to further technological innovation and economic growth. The author believes the U.S. is in a Creative Age that began following World War II and still has the ability to lure talented immigrants from other countries, but is focused on short-term issues such as outsourcing and unemployment. Economists Lawrence Summers, Edward Montgomery, and Anthony Carnevale predict a shortage of skilled and talented workers as the baby boom generation retires.”

**Not so Virtual Economies**


The increasingly lucrative world of on-line role-playing gaming has led to real-world exploitative practices. Erstwhile virtual capitalists are selling characters on gaming trading websites and auction websites that are “leveled-up,” in other words, characters that have accumulated value, wealth, and power through hours of game play. These capitalists are running character “factories” in third-world countries in which underpaid workers are playing these games to build up the value of these characters. The economies of some of these virtual worlds are larger than entire countries.


“A survey by the USC Annenberg Center for the Digital Future has found that 69% of U.S. online shoppers admit to browsing in traditional stores before buying over the Internet (compared to a figure of only 53% in a similar study in 2000). It also works the other way: the percentage getting information or shopping online prior to visiting a regular store 75%. Jeff Cole, who directed the study, says: ‘We do see more and more displacement from retail stores... but it’s absolutely not the death of the retail store.’”


“Yahoo thinks there’s a lot of money to be made by linking Web surfers with local retailers, restaurants, dry cleaners and other businesses. (Currently, 20-25% of
online queries have some local component.) Ted Meisel, president of Yahoo’s search engine subsidiary Overture, says: "We think now is the right time to go after the local market. We are seeing users start to look for local information and we see commerce opportunities in local search... We are going to make it easier for advertisers to participate."

**Intellectual Property (IP) Wars**

While most people are familiar with the issues of file-sharing, sampling and so-called “piracy,” a major fight is occurring within all areas of intellectual property as free culture advocates face off against strong protectionists. If the economic force of the future is creative content and its distribution, then intellectual property policy will be followed as closely as the Federal Prime interest rate or the Stock Market. A survey of a wide range of publications shows that indeed this is the case.


Bill Gates angered “free-culture” advocates by comparing them to communists. There is not conclusive evidence on what level of Intellectual Property protection is most beneficial to the public and to spurring innovation. The lines are being drawn and with our economy becoming ever more dependent on content (see *Dream society*) the stakes are escalating.

Almost immediately after Gates comments were published, the bloggers at *Boing Boing* responded with this tongue-in-cheek “copyleft” commie flag:
• Utne, Leif “Polyrhythmic Patents: Brazil is leading the charge for a new definition of intellectual property that puts people over profits.” Utne Reader, no. 128, March-April 2005. pp. 18-19.

Brazil is leading all nations toward more people-oriented policies in intellectual property rights. It has advocated creative commons licenses in entertainment, promoted free and open software in government institutions, and given away patented AIDS and other drugs. “Poor countries insist on the right to favor patients over patents...” Famous tropicalismo musician and current Culture Minister Gilberto Gil is leading this movement in Brazil.

Having the moral high ground in cases of public health as well as prominent (and “cool”) advocates like Gil indicate a very bright future for this movement. Intellectual property concerns were among the most visible and passionate debates at the recent World Social Forum in Brazil. Says Gil of the free culture/information movement, “It’s a global trend. It’s part of the very process of civilization. It’s the semantic abundance of the modern world, of the postmodern world—and there’s no use resisting it.” But the Tsars of control are still there (and they brought their lobbyists). From Bill Gates to Merck to the RIAA a full scale legal assault is underway. But, the resistors to control are becoming stronger, louder, and larger. It looks to be a rough fight in the IP world.


Creations in virtual worlds and on-line role-playing platforms are increasingly blurring the lines between real and virtual property. China, not the strongest IP rights advocate has given IP protection to characters and designs one makes in virtual gaming worlds. Most game platforms reserve IP rights to the owner of the game, not the players. But, "Second Life" has allowed its users to copyright their creations; other games are expected to follow.


“The Biological Innovation for Open Society, or BIOS, will soon launch an open-source platform that promises to free up rights to patented DNA sequences and the methods needed to manipulate biological material.

Just like open-source software, open-source biology users own the patents to their creations, but cannot hinder others from using the original shared information to develop similar products. Any improvements of the shared
methods of BIOS, the Science Commons or other open-source communities must be made public, as well as any health hazards that are discovered.

If the movement succeeds, biotech companies stand to lose their monopoly on creating integrated biological systems. Some also fear that making the latest methods of genetic modification public will provide terrorists with the know-how to concoct new bioweapons.”

Open-source advocates have been compared to communists and now linked with terrorist dangers. It appears the big symbolic smears are being brought out against them. This is a major policy and cultural battleground that has now become a major trend.

• Curtis, Polly “Scottish universities sign open access deal.” March 14, 2005. The Guardian UK. http://www.guardian.co.uk/life/science/story/0,12996,1437376,00.html

More evidence of a growing counter-movement against the control of knowledge through high priced journal subscriptions, joining movements against proprietary research and classified research.

“The new Scottish Declaration on Open Access is the latest in a series of challenges by universities to break the stranglehold of the major academic publishers which costs taxpayers millions of pounds a year. Publicly funded universities have to pay to have their academics' work assessed for publication, then again to read the journals.”


Finding the edges of patentability?

“A New York scientist's seven-year effort to win a patent on a laboratory-conceived creature that is part human and part animal ended in failure Friday, closing a historic and somewhat ghoulish chapter in American intellectual-property law.

The U.S. Patent and Trademark Office rejected the claim, saying the hybrid -- designed for use in medical research but not yet created -- would be too closely related to a human to be patentable.”

Personal Globalization
Outsourcing is no longer just for big corporations. Signaling a fight to unapologetic corporations who have outsourced their production and information processing, it appears some knowledge workers have begun to outsource their own jobs to individuals in Bangalore and Shanghai. Paying someone else overseas to do their jobs at fraction of the cost leaves individuals more time to explore other opportunities and frees up time for creativity and innovation.

Extensive database matches volunteers to project best suited for their skills and needs. A CHARITY calling on people across England to take up one of thousands of volunteering positions across the globe has launched a database for those wishing to get involved. Worldwide Volunteering has created a massive database of opportunities around the world for anybody wishing to give their time for free and is now calling on everybody to get involved. The charity, which was launched in 1994, has responded to a plea for help from thousands of charities at home and abroad and has now launched an online database which lists 350,000 volunteering opportunities a year.

Neuromarketing

The age of neuromarketing is here. Marketing is using neuro-imaging and neuroscience to find out why and how emotional bonds are created between customers and their brands. But does it really work? Advertising research is looking into the brain processes that occur when people view and choose products. Using fMRI technology researchers are looking for particular signals that will yield some sort of competitive advantage. Is there a “buy” center in the brain? Some writers, like Rushkoff are skeptical and believe this research might just be a confirmation of the obvious and nothing more. For example, it doesn’t take an MRI to know that sex sells.
The techniques, if not the actual physical processes of engendering “brand” loyalty are well known to major religions and nations. The Nazis were brilliant at manipulating visual memory and emotion. These more powerful tools of understanding and manipulation raise warning flags about the potential abuses of neuroscience for unappealing ends.


Although initially introduced for use in 1999 on the public web by Digiscents (which quickly went bankrupt), digital scents are now being used for advertising French wines, perfumes and for educational use in culinary institutes. “The general public will not be able to test these sites from home for a while yet, as the necessary equipment is expensive. Although France Telecom developed its own software, which can be downloaded for free, it learned from Digiscent’s mistakes. To cut costs, it partnered with other companies to manufacture the diffusers necessary to release the odors. Today, these still cost up to $600. “For now, the scented web has more of a B2B application,” explains Messager. “We'll have to wait at least another year for the next generation of diffusers.”
Bio-machine convergence

Living Machines

Christopher Meyer, Jason Lohn, Karl Jacob, Dick Morley, Shana Ting Lipton, Marco Dorigo, Avery Pennarun, “Living Machines” Wired, Issue 12.02, 04/02

Technology and biology are converging fast. The result will transform everything from engineering to art—and redefine life as we know it.

The notion that the inorganic world is alive is as old as mythology; think of Poseidon, the Greek personification of the sea. However, the tools available to examine life at its most essential—DNA sequencing, bioinformatics, gene chips—are new. It turns out that many of life’s properties—emergence, self-organization, reproduction, co-evolution—show up in systems generally regarded as nonliving.


It may eat flies and stink to high heaven, but if this robot works, it will be an important step towards making robots fully autonomous. To survive without human help, a robot needs to be able to generate its own energy. So Chris Melhuish and his team of robotics experts at the University of the West of England in Bristol are developing a robot that catches flies and digests them in a special reactor cell that generates electricity.


Technion scientists have developed a biological computer, composed entirely of DNA molecules and enzymes constructed on a gold-coated chip. This new computer represents a significant improvement over the original computer reported three years ago in a joint paper by Professor Ehud Keinan of the
Technion and a group from the Weizmann Institute of Science, which included Yaakov Benenson, Professor Ehud Shapiro and Professor Zvi Livneh.

The Technion researchers succeeded in increasing the level of complexity of their computer. Whereas the original computer could accept up to 765 different programs, the new computer can accept as many as 1 billion programs. This increase represents a dramatic advance in terms of the potential mathematical operations and complexity of problems that may be solved using a biological computer. The results are published this week in the *Journal of the American Chemical Society*.

Bio-printers


Scientists are developing an inkjet printer that can create "made to measure" cells, skin and bones to treat people for a variety of afflictions including severe burns or disfigurements. Human cells are suspended in a nutrient-rich liquid before being printed out in several thin layers. The printers create 3-D structures, known as tissue scaffolds.

Robots and Artificial Intelligence


“Most people’s expectations of robots are driven by fantasy. These marvelous machines, optimists hope, will follow Moore's law, doubling in quality every 18 months, and lead to a Jetsonian utopia. Or, as pessimists fear, humanoid bots will reproduce, increase their intelligence, and wipe out humanity.

“Both visions are wrong. The artificial intelligence to animate robots remains several orders of magnitude less than what’s needed. We have to master either software engineering or self-organization before our most intelligent designers can dare play in the same league as Mother Nature.

“My definition of a robot is any device controlled by software that can work 24/7 and put people out of work. The machines are not intelligent. They cannot comprehend Isaac Asimov's Three Laws of Robotics to protect and obey humans before preserving themselves. Yet they are all around us. In case you missed
them, today's most popular robots are ATMs and computer printers.

“While our hopes for and fears of robots may be overblown, there is plenty to worry about as automation progresses. The future will have many more robots, and they'll most certainly be much more advanced. This raises important ethical questions that we must begin to confront.

1. **Should robots be humanoid?** Humanlike robots today are showbots, created for marketing purposes. They allow corporations to display technological machismo, wooing consumers to trust their cars and stereos. The risk is not humanoids running amok, but that as these electronic puppets become more lifelike, they become door-to-door spambots who trick people into buying snake oil and junk bonds.

2. **Should humans become robots?** We are nearing an age in which humans and computers may be connected via direct neural interfaces, technology indistinguishable from telepathy and telekinesis. In the input direction, computers might use electrodes to format information for our brains to understand. In the output direction, humans might be trained to think in distinct ways so that sensors and software could classify thoughts into signals to control equipment. While potentially beneficial for paraplegics, there's the frightening opportunity for using animals as cheap, disposable robot bodies.

3. **Should robots excrete byproducts?** When cars were invented, no one imagined that hundreds of millions of them would spew carbon monoxide into the atmosphere. But they do, and yet we still feel entitled to drive them. Imagine the pollution levels if we add hundreds of millions of robots powered by internal combustion engines.

4. **Should robots eat?** There are proposals to allow robots to gain energy by combusting biological matter, either food or waste items. If this mode of fuel becomes popular, will we really want to compete for resources against our own technological progeny?

5. **Should telerobotic labor be regulated?** A telerobot is an electronic puppet controlled across a wire by a human using a PC and devices like joysticks and gloves. Consider replacing the on-site operator with a $10-per-day handler in an overseas call center. Instead of outsourcing jobs, we could import brains over broadband to manage machinery in factories, to teach in schools, or to clean houses. Should local labor laws apply to overseas workers who telecommute?

6. **Should robots carry weapons?** We must distinguish autonomous robot weapons from remote control armaments—unmanned telerobots supervised by humans. The ethical difference between the two: Who's responsible for pulling the trigger?
7. Should machines be awarded patents? Evolutionary software has already designed simple circuits, as well as physical mechanisms like the ratchet and cantilever. As these automatic design systems improve and progress from simple geometric forms to novel integrated systems, intellectual property laws must change. If a robot invents, does the patent go to its owner or the patent holder of its artificial intelligence?

"These questions are the beginning of a dialog that should precede, rather than react to, the enormous social, economic, and legal changes wrought by continued automation. Managed correctly, the increased labor and intelligence provided by machines can lead to greater human prosperity and improved conditions on Earth. We need reasonable policies informed by the robots of reality, not of fantasy."


Minimally Invasive Surgery (MIS) has become one of the most important research areas in the field of medical engineering. Robotic colonoscopy is a typical medical procedure that complies with the requirements of MIS. In this paper, a new novel miniature robot for intestinal inspection based on the earthworm is described; its diameter and length are 7.5 mm and 120 mm respectively. The micro robot is driven by a DC motor which has good performance and sufficient power. In this paper the structure and locomotion mechanism of this robot are introduced; the mechanical model is built; and simulation is carried out. The control system and software design are also discussed in detail. Some actuating characteristic experiments have been performed, where the micro robot creeps in declining rubber tubes. The experimental results are in accord with simulation results, and show that this kind of robot can move reliably in horizontal and certain declining tubes. This research has laid a foundation for the application of the miniature robot endoscope.


Half of those surveyed prefer virtual visit by their own physician to real visit by unfamiliar doctor. "Generally, the robot checked up on patients, asked them how they were feeling, inspected their surgical sites to ensure proper healing, and answered questions," said Dr. Louis Kavoussi, a professor of urology at Johns Hopkins and the study’s lead author. Two weeks after the patients were discharged, a questionnaire asked them about the “telerounds.”

Half of those queried said they would prefer a telerounding visit by their own
physician to a real visit by another physician. Half said that telerounding should become a standard practice for post-operative patient management, and 57 percent said they would feel comfortable having telerounds as part of their future care.

- Soskis, Benjamin “Man and the Machines: It's time to start thinking about how we might grant legal rights to computers.” Legal Affairs Jan-Feb 2005 http://www.legalaffairs.org/issues/January-February-2005/feature_sokis_janfeb05.html

“At some point in the not-too-distant future, we might actually face a sentient, intelligent machine who demands, or who many come to believe deserves, some form of legal protection. The plausibility of this occurrence is an extremely touchy subject in the artificial intelligence field, particularly since over-optimism and speculation about the future has often embarrassed the movement in the past.

The legal community has been reluctant to look into the question as well. According to Christopher Stone, a University of Southern California law professor who briefly raised the issue in his well-known 1972 essay, "Should Trees Have Standing?," this is because, historically, rights have rarely been granted in abstraction. They have come only when society has been confronted with cases in need of adjudication. At the moment, there is no artifact of sufficient intelligence, consciousness, or moral agency to grant legislative or judicial urgency to the question of rights for artificial intelligence.”


The Pentagon is expected to spend more than $10 billion through 2010 for unmanned aerial vehicles. The Defense Advanced Research Projects Agency is sponsoring more than 40 projects in robotics.

- “Robot Hall of Fame” http://www.robothalloffame.org/news.html

Carnegie Mellon University, in partnership with the Carnegie Science Center, has inducted the second class of robots into the Robot Hall of Fame. The robots selected this year are: Honda's humanoid robot ASIMO; Shakey, the first mobile robot to reason about its actions, developed by SRI International; Astro Boy, a Japanese animation of a robot with a soul; Robby the Robot, from MGM's 1956 science-fiction epic "Forbidden Planet;" and C-3PO, from the Star Wars series.
Established in 2003, the Robot Hall of Fame honors both real and fictional robots and their creators in recognition of the increasing benefits robots are bringing to society.

**Digital and Cyborg Existence**

- “Hell no, they won’t go”
  [http://www.collisiondetection.net/mt/archives/000639.html](http://www.collisiondetection.net/mt/archives/000639.html)
  A lesson so obvious it’s scary...

“It’s the greatest and most spectacular battle in the *Lord Of The Rings* trilogy. But filmmakers faced one surprising challenge—how to keep the computer-generated soldiers from fleeing the battlefield.

Special effects designer Richard Taylor says that this order led to the writing of a "massive" principal code for the battle in order to give more than 200,000 digitized soldiers and some 6,000 horses distinctiveness and individuality.

Basically, all the necessary information for decision-making was fed into this network of computers without determining for them whether they would win or lose. But this aim to ensure that they acted spontaneously almost sabotaged the battleground sequences.

‘For the first two years, the biggest problem we had was soldiers fleeing the field of battle,' Taylor laughs. ‘We could not make their computers stupid enough to not run away.’ So some extra computer tinkering was required to make the soldiers put themselves at risk.”

- McKie, Robin “Machine rage is dead ...long live emotional computing: Consoles and robots detect and respond to users' feelings.” April 11, 2004 *The Observer*  
  [http://observer.guardian.co.uk/print/0,3858,4899541-102285,00.html](http://observer.guardian.co.uk/print/0,3858,4899541-102285,00.html)

  “Computer angst—now a universal feature of modern life—is an expensive business. But the days of the unfeeling, infuriating machine will soon be over. Thanks to breakthroughs in AI (artificial intelligence), psychology, electronics and other research fields, scientists are now creating computers and robots that can detect, and respond to, users' feelings. The discoveries are being channeled by Humaine, a £6 million program that has just been launched by the EU to give Europe a lead in emotional computing.”

- Glenn, Joshua “The theological robot,” Boston Globe February 6, 2005  
“While visiting MIT’s Artificial Intelligence Lab in the fall of 1995, esteemed Harvard Divinity School professor Harvey Cox noticed that the motor—driven eyes of Cog, a 7—foot—tall humanoid robot, were tracking his every movement. So he reached out and shook the creature’s hand. "There was a collective gasp from the Harvard theologians and MIT scientists present," self—described robotics theologian Anne Foerst recounts in her new book, "God in the Machine" (Dutton). In her book, Foerst seeks to bridge the divide between religion and AI research—by arguing that robots have much to teach us about ourselves and our relationship with God."


The next generation of on-line communities look to be taking place in 3-D virtual worlds like “There” and “second Life” where there are very few goals except to socialize with other gamers. The technologies for creating “avatars,” or virtual 3-D representations are becoming more advanced and people are taking on the persona of opposite genders, different ages, and non-human entities such as animals or robots.


Marginal and isolated communities—like the Deeni tribe of northwest North America—have begun to gather in virtual on-line game spaces like Second Life. This ease of access to each other and a shared “home” could lead to the revitalization of cultures and languages.

- Watts, Jonathan “Sex and the single robot” Wednesday February 2, 2005
  The Guardian UK
  http://www.guardian.co.uk/life/science/story/0,12996,1403780,00.html?gsc
  rc=rss

“Kim Jong-Hwan, the director of the ITRC-Intelligent Robot Research Centre, has developed a series of artificial chromosomes that, he says, will allow robots to feel lusty, and could eventually lead to them reproducing. He says the software, which will be installed in a robot within the next three months, will give the machines the ability to feel, reason and desire.

Kim, a leading authority on technology and ethics of robotics, said: ‘Christians may not like it, but we must consider this the origin of an artificial species. Until now, most researchers in this field have focused only on the functionality of the machines, but we think in terms of the essence of the creatures.’”
• Jalil, Jannat “HK firm develops cyber girlfriend”
  http://news.bbc.co.uk/2/hi/asia-pacific/3591856.stm

“The Hong Kong company Artificial Life, which developed the new game, says the girl will appear as an animated figure on the video screen of a mobile phone.

All virtual girls will look the same—but each girl will behave differently—depending on how much money is spent on her. On top of a general subscription, men will be charged a fee to buy flowers and gifts for the virtual girlfriend.”


“By playing games, like pass-the-parcel, a University of Hertfordshire team is finding out how future robot companions should react in social situations. The study’s findings will eventually help humans develop a code of social behaviour in human-robot interaction. The work is part of the European Cogniron robotics project, and was on show at London’s Science Museum. “I want robots to treat humans as human beings, and not like other robots, said Professor Kerstin Dautenhahn, of the University of Hertfordshire.”


Wearable computers and permanent bio-cyber interfaces are becoming more common and socially acceptable. Ubiquitous information devices could tell you what music or movies people in your vicinity like and lead you to like-minded folks. But, these cyborg augmentations have already caused problems for airport security and in classrooms.

Genetics: 46, 47, 48 little chromosomes...

• “The Genrich class and the natural human species” posted by body at We Make Money not Art Blog March 16, 2005 www.we-make-money-not-art.com/archives/004971.php

The artificial human chromosomes (HACs) technology adds an extra
Proponents believe HACs can be made to replicate each time cells divide, and it could be possible to turn their genes on or off at will. It might also be possible to include a self-destruct mechanism that prevents the HAC from being passed on to future generations if necessary.

Gregory Stock and John Campbell of the University of California believe it will soon be possible to consider therapies that involve inserting specially-designed HACs into human embryos. An HAC could be built containing genes that confer life-long resistance to HIV. Another idea is to introduce into male embryos an HAC containing a series of genetic switches that can, when turned on, trigger the destruction of prostate cancer cells.

If preventative treatments such as these are shown to work safely, one can envisage treatments delivered as a "gene cassette" on a single HAC. For instance, anti-aging genes could be added to every embryo's extra chromosome.

One scenario that has been envisaged is the idea of human society being divided between the "gene enriched" and the "naturals"—some people having the resources to exploit all aspects of the technology to improve their life, with others left to live and breed naturally. Princeton University's Lee Silver believes that although such a dystopia is not imminent, it is plausible and could eventually lead to two species of humans.

- DNA with three base pairs—A step towards expanding the genetic code.

"Scientists at The Scripps Research Institute in La Jolla, California are reporting today at the 229th national meeting of the American Chemical Society progress toward the creation of a system for replicating a modified form of DNA containing an unnatural base pair.

According to the Scripps Research scientists, this finding is a significant step towards expanding the genetic code and the ability of DNA to act as an information storage and retrieval system in the test tube and in simple, engineered organisms, such as yeast or bacteria. DNA with three or more base pairs could find broad applications in a number of fields, including biotechnology, medicine, data storage, and security."
Scientists project that some 13.2 million older Americans will have Alzheimer's disease (AD) by 2050 unless new ways are found to prevent or treat the disease. According to these latest estimates of the current and future prevalence of AD, reported by Denis A. Evans, M.D., and colleagues, the numbers of older people with AD — now at 4.5 million — will grow dramatically as the population ages. The most notable increases will be among people age 85 and older, when by mid-century 8 million people in that age group may have the disease.

When asked "What will the retirement age be in the next 20 years?" Dale Bredesen, President of the Buck Institute for Age Research, answered:

"Between 70 and 72. In 1935, one could expect to live about 12 years after retirement at age 65; today, one can expect to live closer to 18 years after. And the 65-year-old of today is likely to be biologically younger than the 65-year-old of 1935—because of antibiotics, exercise, diet, or other influences. Our current crude approach—in which everyone is assumed to be physiologically the same at 65—will be replaced by a more accurate approach. Retirement 'age' will be replaced by retirement 'state'."

Peter Schwartz Chair, Global Business Network; author, The Art of the Long View said: "It'll be 75. The current generation, the leading edge of the baby boom, will enjoy a certain measure of life improvement from the latest medical breakthroughs, but the next generation will see lifespan expand enormously. Our children will look forward to a life measured in centuries, and current notions of retirement will have to change drastically."

Some experts say that scientific advances will one day enable humans to last decades beyond what is now seen as the natural limit of the human life span.

"I think we are knocking at the door of immortality," said Michael Zey, a Montclair State University business professor and author of two books on the future. "I think by 2075 we will see it and that's a conservative estimate."
Donald Louria, a professor at New Jersey Medical School in Newark, said advances in manipulating cells and genes as well as nanotechnology make it likely humans will live in the future beyond what has been possible in the past. "There is a dramatic and intensive push so that people can live from 120 to 180 years," he said. "Some have suggested that there is no limit and that people could live to 200 or 300 or 500 years."

Any dramatic extension of the human life span would depend on altering the onset of disabilities that accompany the aging process by changing one's genetic make up, said Harvey Cohen, director of the Center for the Study of Aging and Human Development at Duke University Medical Center. "It's certainly unlikely any time in the near future," he said in an interview. "Sure there is a possibility but there is no data currently available to suggest ways that would happen."

"It remains to be seen if you pass the threshold of say 120, you know; could you be healthy enough to have good quality of life?" said Leonard Poon, director of the University of Georgia Gerontology Center. "Currently people who could get to that point are not in good health at all."

- DeGrey, Aubrey "We will be able to live to 1,000" BBC News December 3, 2004, downloaded at http://news.bbc.co.uk/1/hi/uk/4003063.stm

Cambridge University geneticist Aubrey de Grey believes life expectancy will soon extend dramatically to 1,000. The SENS (Strategies for Engineered Negligible Senescence) project, a detailed plan to repair all types of molecular and cellular damage, should be working in humans in 20 years, he says. "I think the first person to live to 1,000 has already been born."

- http://longevity-science.org/

As we understand more about the aging process and the deterioration of living matter, the possibilities of radical life extension become more achievable.

"Many scientists now believe that, for the first time in human history, we have developed a sophisticated enough understanding of the nature of human aging to begin seriously planning ways to defeat it. These scientists are working from a simple but compelling notion: the body, far from being a perfect creation, is a failure-prone, defect-ridden machine formed through the stochastic process of biological evolution. In this view, we can be further improved through genetic engineering and be better maintained through preventive, regenerative, and
antiaging medicine and by repairing and replacing worn-out body parts. In short, the rate at which we fall apart could be decreased, maybe even to a negligible level."


“Since their vociferous beginnings after the Second World War, the demographic anomalies known as Baby Boomers have shown little complacency about living.

Today, as the Boomers get older and older, they are finding the realities of aging quite unpalatable, and they are dealing with it in much the same way they dealt with previous problems: Converting a general unwillingness to accept limitations and conventions into an assault on handed-down traditions and so-called ‘realities.’


Mid-life crisis brought on by decreasing testosterone? Testosterone output decreases for men at a rate of about 1% per year from the time they are 30. Doctors have begun prescribing testosterone to help raise levels to “normal.” Many men taking testosterone are amazed at their increased energy. Male menopause has been nicknamed “menoporsche” alluding to the trend of men buying sport cars to combat the feeling of aging.

Death Becomes You

- http://www.vhemt.org/

This is the home-page for the "Voluntary Human Extinction Movement." Just another perspective from a rather conservative (in the terms of the human extinction movement) of where the human race should be in the
future. If you want a more radical perspective for pro-Human-extinction, visit http://www.churchofeuthanasia.org/index.html

Life in a bottle


15,223 test tube babies (in vitro fertilization) were born in Japan in 2002., which represents 1.3% of total births that year, an increase of 15.7%—or about one seventh—from the previous year. The total number of test-tube babies born in Japan from 1986 (the time obstetrics associations began recording data) to the end of 2002 was 100,189.


Scientists in the UK are applying for a license to create human embryos with three genetic parents. The aim is ultimately to prevent children from inheriting genetic diseases caused by mutations in DNA housed by their mitochondria—components of cells which produce energy. The research application from Doug Turnbull and Mary Herbert at the University of Newcastle will be decided upon by the UK’s regulatory body, the Human Fertilization and Embryology Authority, over the next few weeks. The procedure would involve fertilizing a woman's egg by in-vitro fertilization outside the body and transplanting the fertilized nucleus to an egg from another woman which has had its nucleus removed. Any child born following implantation of such an embryo would have cells containing a nucleus with genes from both parents, and mitochondria from a woman other than their mother.

The procedure, which is banned in the US, was first carried out in 2003 by a Sino-American team in China. Here the researchers achieved a pregnancy, but not a live birth.

Some people are uncomfortable with the idea of creating children with three parents on religious or moral grounds and others have denounced it as the first steps to the genetic engineering of human beings. Jacques Cohen at the Institute for Reproductive Medicine and Science in Saint Barnabas in New Jersey, US, believes the "three parent" tag is misleading because so few genes (around 35) come from the mitochondria compared with around 30,000 in the nuclear genome.
Electronic prescribing, or "e-prescribing," enables a physician to transmit a prescription electronically to the patient’s choice of pharmacy. It also enables physicians and pharmacies to obtain from drug plans information about the patient's eligibility and medication history. E-prescribing can theoretically improve patient safety and reduce avoidable health care costs by decreasing prescription errors due to hard-to-read physician handwriting and by automating the process of checking for drug interactions and allergies. But just as with electronic medical records, the main concern is the loss of privacy and hackability of a computer system linked to the Internet, not to mention questionable but legal information sharing with, say, a potential employer.

**Nanotechnology**

- “Small science to be big in 2005: "Nanotechnology" will be a much more familiar word to everyone in 2005, not just scientists, say analysts.” 20 January, 2005 http://news.bbc.co.uk/2/hi/science/nature/4187813.stm

Nanotechnologies involve the manipulation of structures at the molecular scale and can change the behavior of materials. It has been slowly moving into sun creams, drug delivery and computer disk drives to improve storage. But it will soon be the cornerstone of every manufacturing industry says a Deloitte research trends report.

The Deloitte research “Predictions 2005” report points to key developments in nanotechnologies to keep an eye on in the coming year:
- Organic Light Emitting Diodes (OLEDs) for displays
- Photovoltaic film that converts light into electricity
- Scratch-proof coated windows that clean themselves with UV
- Fabrics coated to resist stains and control temperature
- Intelligent clothing measures pulse and respiration
- Bucky-tube frame is light but very strong
- Hip-joint made from biocompatible materials
- Nano-particle paint to prevent corrosion
- Thermo-chromic glass to regulate light
- Magnetic layers for compact data memory
- Carbon nanotube fuel cells to power electronics and vehicles
- Nano-engineered cochlear implant

“Andrea Alù and Nader Engheta of the University of Pennsylvania in Philadelphia say that a 'plasmonic cover' could render objects ‘nearly invisible to an observer’. Their idea remains just a proposal at this stage, but it doesn't obviously violate any laws of physics.” Military applications of course come quickly to mind, but this technology could also be used for making better visual microscopy and anti-glare materials.

Nanoprecautions

- “Nanotech Arms Races” Center for Responsible Nanotechnology http://crnano.typepad.com/crnblog/2004/06/nanotech_arms_r.html
- “UK study calls for extra safety measures for nanotechnology” July 29, 2004. nanotechweb.org

As nanotechnology is now a fully emerged trend, the dangers of nanotech continue to be raised and analyzed. The potential military uses for molecular manufacturing are a major concern. Nano-weapons and the potential for nano-wars are spurring talk of a very destabilizing nanotech arms race.

“Billions of toxin-carrying insectoid nanobots could fit in a small packing crate. Orbital or UAV-based weapons can be deployed on a large scale. It looks like civilians and civilian property may not be defensible without major lifestyle changes. It’s possible that a comprehensive shield could protect against some forms of attack, possibly including nano-scale robots, but long-range high-energy weapons may require impractical amounts of shielding.”

Big money for Nano


“Public and private individuals and institutions will spend more than $8.6 billion worldwide on nano research and development this year, according to "The Nanotech Report 2004," published by New York-based Lux Research Inc. The report also found that nanotech startups are beginning to make money, with revenue ranges between $10 million and $20 million.”
**Space**

**The Red Planet?**

In January 2004, President George Bush unveiled a plan for a manned mission to Mars, proposing the Moon as a stepping stone. Initially, he told NASA to find the money by changing current funding priorities internally. But his 2005 budget proposals add new money to the Mars project—almost alone in what was otherwise a sea of budget cuts for all projects, including those in science and technology.


Mars is a very watery planet, but all the water seems to be frozen. Diving the amount and distribution of this water, past and present, is essential for understanding Martian climates.

**Around the world**


Russian space scientists say its time to press ahead with plans for a voyage to the Red Planet via nuclear propulsion.

- Bagla, Pallava "Westerners put their chips on 2007 Indian Moon Mission," Science October 8, 2004, p. 222. Developing countries have started their own moon race, and scientists from cash-strapped developed countries are hoping to hitch a ride.


After a long hiatus of lunar exploration, a host of countries—and companies—will soon begin launching a flotilla of spacecraft to Earth's nearest neighbor. They include the European Space Agency, India, China, and a variety of commercial ventures that have been spurred on by current private successes and growing interest in space tourism.
Private Space


Privately-funded space activities, including space tourism, got a substantial boost on October 4, 2004, when the rocket glider, SpaceShipOne captured the Ansari X Prize awarded to the first private, manned craft to venture into space twice within a two-week period. The ship was created by aerospace engineer Burt Rutan and financed by Microsoft billionaire Paul Allen. The concept of the X prize came from Peter Diamandis, in imitation of the prize that eventually lured Lindberg to fly from the US to Europe solo for the first time. Rutan and Allen have already linked with British billionaire Richard Branson, owner of Virgin Atlantic Airlines, to create Virgin Galactic, the world's first commercial rocket service. The plan is to create a five-seat craft that could carry tourists into space by 2007 for $190,000 per head.

- Ron Cowen, "Ribbon to the stars: Pushing the space elevator closer to reality," Science News, October 5, 2002, p. 21f
- Graczyk, Michael “Blue Origin Spaceport Plans are Talk of Texas Town” AP March 15, 2005
  www.space.com/missionlaunches/ap_bezos_spaceport_050315.html

“Even skeptical locals, who’ve become wary over the years of city slickers with big ideas for their town, perked up when Amazon.com founder Jeff Bezos made his pitch—a spaceport for commercial travel into the beyond.

“He walked in and said: ‘Hi, I’m Jeff Bezos,’ and sat down right in that chair there,” Simpson said, pointing to spot in his small cluttered office.”

Over the next 30 to 40 minutes, Simpson said Bezos told him the goal of his venture—known as Blue Origin—was to send a spaceship into orbit that launches and lands vertically, like a rocket. “He told me their first spacecraft is going to carry three people up to the edge of space and back,” Simpson said. “But ultimately, his thing is space colonization.”

Teleportation

- O’Connor, Peter "Teleporting experts say matter may be next," Honolulu Advertiser, June 23, 2002, p. A3
The Teleportation Physics Study done by Eric Davis of Warp Drive Metrics was tasked with the purpose of collecting information describing the teleportation of material objects, providing a description of teleportation as it occurs in physics, its theoretical and experimental status, and a projection of potential applications. The study also consisted of a search for teleportation phenomena occurring naturally or under laboratory conditions that can be assembled into a model describing the conditions required to accomplish the transfer of objects."

The author broke down the various possibilities in this way:

- Teleportation – SciFi: the disembodied transport of persons or inanimate objects across space by advanced (futuristic) technological means (adapted from Vaidman, 2001). We will call this sf-Teleportation, which will not be considered further in this study.
- Teleportation – psychic: the conveyance of persons or inanimate objects by psychic means. We will call this p-Teleportation.
- Teleportation – engineering the vacuum or spacetime metric: the conveyance of persons or inanimate objects across space by altering the properties of the spacetime vacuum, or by altering the spacetime metric (geometry). We will call this vm-Teleportation.
- Teleportation – quantum entanglement: the disembodied transport of the quantum state of a system and its correlation across space to another system, where system refers to any single or collective particles of matter or energy such as baryons (protons, neutrons, etc.), leptons (electrons, etc.), photons, atoms, ions, etc. We will call this q-Teleportation.
- Teleportation – exotic: the conveyance of persons or inanimate objects by transport through extra space dimensions or parallel universes. We will call this e-Teleportation.

The Neuro Revolution

Advances in neuroscience, neural imaging, and neurotechnologies signal a major trend that will impact all aspects of our lives. We will be faced with an onslaught of ethical, legal, and political decisions stemming from new understandings and new tools to modify our brains.

Brain-Computer Interfaces

- Twist, Jo “Brain Waves Control Video Games.”
  http://news.bbc.co.uk/2/hi/technology/3485918.stm
Brain-computer interfaces (BCI) have become a reality. These are very rudimentary now, but a number of more sophisticated methods are in the experimental stage. A video game developed at MIT Media Lab Europe uses a wireless headset to translate EEG brain signals into video game controls. This has implications not only for gamers, but also for paralyzed or debilitated individuals or anyone who wants to “jack-in” directly to a computer. This technology could allow people with ALS or other diseases in which their brain is functioning but they have limited movement to communicate more effectively.

Neuropolitics


"Lying activates tell-tale areas of the brain that can be tracked using functional magnetic resonance imaging (fMRI), according to scientists who believe the technique could replace traditional lie detectors."

This technology could revolutionize our legal, social, and political systems. Eventually, they will be much more accurate and reliable than polygraphs, fMRI could be used on court witnesses, job interviews, or (dream of dreams) politicians answering our questions. As always, these functions could be abused or manipulated by those in power. Thought police are tempted with more and more powerful tools.


New brain imaging technologies will allow greater precision in determining whether a patient is brain-dead. This could change the legal and ethical arguments surrounding “death with dignity” or lead to a moratorium on “pulling the plug.”

Fears continue to grow about a reported plan by the Bush Administration to screen every American child for mental health problems. A report from the New Freedom Commission on Mental Health issued in July 2003 spoke of the benefits of widespread mental-health screening of Americans of all ages. It also noted that schools provide a promising venue for administering such evaluations for both students and adult school workers.

This report indicates a growing trend to medicalize aberrant behavior at younger and younger ages. Geske notes “while mandatory medicalization for minors has been prohibited, psychiatric testing and cradle-to-grave screening of family members are still possibilities, leading critics to worry that in this post-9/11 political climate the government wants to increase mental health services simply to get access to mental health records.”

The fear that this type of universal screening raises, however, obscures the true need for more understanding of mental health problems in young people. We accept screening for things such as vision and hearing problems, but when we talk about the mind there is significant potential for abuse or unintended consequences.

Neurocops

- *PharmacoTherapy and The Future of The Drug War: A report by the Center for Cognitive Liberty & Ethics*
  http://www.cognitiveliberty.org/issues/pharmacotherapy.html
  http://news.independent.co.uk/uk/crime/story.jsp?story=544439

There is a growing concern over possible "drug vaccines" which block people from getting "high." The technologies are only in their experimental phases and the "vaccines" only last a few weeks. But it raises the concern of interference with our personal freedom and that the future be policed by *Neurocops*.

"Over the next decade an increasing number of new pharmacotherapy medications will become available with the potential to tremendously impact the use and abuse of illegal drugs and the overall direction of national and international drug policy. These pharmacotherapy medications are designed to block or significantly reduce the highs elicited by illegal drugs. Used as part of a drug treatment program, pharmacotherapy medications may provide a valuable aid for people seeking a chemical aid in limiting or eliminating problem drug use. However, the tremendously politicized nature of the drug war, raises substantial concerns that in addition to those who choose to use such medications, some people will be compelled to use them. In the absence of extraordinary
circumstances, governmental action compelling a person to use a pharmacotherapy drug would violate a number of constitutional guarantees and other legal rights protecting people from forced medical treatment. Among the rights potentially implicated by compulsory use of pharmacotherapy drugs are the right to informed consent, the right to bodily integrity and privacy, the protection against cruel and unusual punishment, and the right to freedom of thought."

Cognitive Enhancement


Cognitive and attention enhancing drugs are now on the market and their popularity is rising quickly. Neuroceutical or cogniceuticals like modafinil have shown wide promise to improve concentration and mental stimulation. The speed of development of new drugs is staggering and comes from increasing understanding of how the brain works as well as the deep pockets of the U.S. military which is funding a large portion of the research. Dozens of other drugs for memory enhancement, sleep suppression, and cognitive enhancement are in the pipeline and should be on the market within 5-10 years.

The social and economic imperatives to take neuroceutical will be great. These drugs offer workers and students a “neurocompetitive advantage” which raises the long-standing ethical issues of access and equal opportunity. But if we overcome those problems, we could have a great result as neuroethicist Martha Farah notes, “To have the wisdom of age and the memory of a young person? That’d be a very good combination.”


“Rapid progress has been made in understanding the synaptic changes required for memory encoding. Several companies are now attempting to use information about the induction and consolidation phases of this process to build memory-enhancing drugs. These efforts have produced novel compounds that improve retention scores across a broad range of tests and species. Initial clinical results are encouraging. Issues now arise about appropriate applications of candidate drugs and optimal cellular targets for future development."

The ability to block or erase memories looks to be technically achievable in the near future. This will undoubtedly raise enormous issues for policy makers and the courts. Should removal or blocking memories be made illegal? What about people who have had traumatic experiences? Or emergency workers? Or criminals?

Illustration by Anna Cobb.

- Healy, Melissa “Call These Drugs IQ-profen; Brain Research is Leading to Quick Advances Toward ‘Smart Pills’,” Los Angeles Times, republished online in the Houston Chronicle, Jan. 15, 2005, at http://www.chron.com/cs/CDA/ssistory.mpl/features/2991538

Modafinil is one of an array of brain-boosting medications that promises sharper thinking through chemistry. These drugs seem to help improve mental acuity. Marketed under the name “Provigil,” this raises the question of whether the rich will get “smarter” while the poor fall further behind (these drugs can cost up to $6 per dose). Also, will people feel compelled to use medication just to keep up with their peers in school or on the job? Notions of “normal intelligence” may be changed forever. Side effects can be subtle mental changes over time, such as remembering too much detail, which could clutter the brain, resulting in someone who remembers everything but understands nothing.


Antidepressant medication for mild mood disorders actually produce beneficial effects even on healthy people. Could lead to “cosmetic psychopharmacology” and even enforced drug-taking to control members of society.
Neuroethics


“If you could take a pill to make yourself smarter, would you? How about if you could give a criminal a pill to make them no longer commit their wrong doings? What if their wrong doings were only speeding or petty theft? If pills like these, or surgery or some other treatment, were available what impact would they have on society? What are the ethical, moral and legal dilemmas surrounding our understanding of, and ability to change, cognition?”

These issues have been taken up by the President’s Council on Bioethics and will join genetic engineering, cloning, death with dignity, abortion, and stem cell research as a major area of ethical and political debate. How we will deal with “cosmetic neurology”?


Harvard President Lawrence Summer’s suggestion that women may not be as cognitively capable as men in math and science sparked a wave of protests across academia. As new understandings of how the brain works continue, the interpretation of these findings could add new fire to age-old debates about the causes of human differentiation.

Singularity


Technological change is happening at an exponential rate. We won’t just experience 100 years of progress in the 21st Century—it will be more like 20,000 years. Near future results include the merging of biological and nonbiological entities in biorobotics, plants and animals engineered to grow drugs, software-based "life," smart robots, and atom-sized machines that self-replicate.

Singularity is defined by Ray Kurzweil as technological change so rapid and profound that it will create a rupture in the fabric of human history. True believers, called extropians, posthumans, and transhumanists, are actively organizing to
bring the singularity about, while various technophobes and neo-Luddites are opposed. Compare <www.singularity.org> with <singularitywatch.com>.
ENVIRONMENT, POPULATION, ENERGY, FOOD

Limits to Growth Update


In 1972 the authors published their famous *Limits to Growth* study, sponsored by the Club of Rome. The book was one of the most widely-discussed nonfiction books in history—often debunked and often praised, but very well-known. It relied on a series of computer generated projections to suggest that the world was in danger of reaching the environmental limits to continued economic and population growth. In 1992, in a book titled, *Beyond the Limits*, they said that humanity had already overshot the limits of Earth's support capacity. They urged that a series of things be done to cushion the impact.

In their current book, they state that the world was last at sustainable levels in the 1980s. Human resource use has now overshot carrying capacity by 20%—and it is rising. Humanity squandered the past 30 years in futile debates and half-hearted responses to the global ecological challenge. We do not have another 30 years to dither. Unless humanity makes major and quick changes from its current trajectory—and the authors once again very carefully and fully explain what should be done, but is not likely to be done—the collapse will arrive very suddenly, and soon.

Governing Evolution

- Dyson, Freeman “The Darwinian Interlude” *Technology Review*, March 2005 [www.technologyreview.com/articles/05/03/issue/magaphone.asp](http://www.technologyreview.com/articles/05/03/issue/magaphone.asp)

The Darwinian era is over—cultural evolution has replaced biological evolution as the driving force of change, says Freeman Dyson, professor emeritus of physics at the Institute for Advanced Study.

"Cultures spread by horizontal transfer of ideas more than by genetic inheritance. Cultural evolution is running a thousand times faster than Darwinian evolution, taking us into a new era of cultural interdependence that we call globalization.

"And now, in the last 30 years, Homo sapiens has revived the ancient pre-Darwinian practice of horizontal gene transfer, moving genes easily from microbes to plants and animals, blurring the boundaries between species. We are moving rapidly into the post-Darwinian era, when species will no longer exist, and the evolution of life will again be communal."
"In the post-Darwinian era, biotechnology will be domesticated. There will be do-it-yourself kits for gardeners, who will use gene transfer to breed new varieties of roses and orchids. Also, biotech games for children, played with real eggs and seeds rather than with images on a screen.

"Genetic engineering, once it gets into the hands of the general public, will give us an explosion of biodiversity. Designing genomes will be a new art form, as creative as painting or sculpture. Few of the new creations will be masterpieces, but all will bring joy to their creators and diversity to our fauna and flora."

**Global Warming**

Is it hot, or is it just everybody?


Climate change is real, and the causal link to increased greenhouse emissions is now well established. Globally, the 10 hottest years on record have occurred since 1991. This is a clear measure of increased frequency of high storm surges around North Sea coasts, combined with high flood levels in the River Thames. (...) extreme temperature events become more frequent and more serious. Climate change may be the most severe problem that we face today, even more serious than the threat of terrorism. States and Pacific islands are suing, not for cash but to lower carbon dioxide. “


There is a clear and overwhelming scientific consensus on the reality of anthropogenic climate change. Climate scientists have repeatedly tried to make this clear. It is time for the rest of us to listen.

The consensus of course might be wrong. But our grandchildren will surely blame us if they find that we understood the reality of anthropogenic climate change and failed to do anything about it.
The health consequences of global warming could be many.


"I read the report put out by the bureaucracy," Bush said dismissively yesterday when asked about the EPA report, adding that he is still opposed the Kyoto treaty.


The White House directed a major rewrite of an assessment of climate change, removing references to health and environmental risks posed by rising global temperatures.


A major argument used by skeptics of global warming is flawed, a UK Met Office study in Nature magazine says. This argument maintains that much recorded climate data is inherently unreliable because of where weather instruments are situated.

Most are in or near cities, which produce their own heat; so the rapid warming measured over the last century could be just a record of urbanization. The Met Office believes its study shows this "urban heat island" idea is wrong. The analysis has been done by Dr David Parker. He used data for the last 50 years to create two separate graphs. One plots temperatures observed on calm nights, the other on windy nights.

If the urban heat island hypothesis is correct, he says, instruments should have recorded a bigger temperature rise for calm nights than for windy ones—because wind blows excess heat away from cities and away from the measuring instruments.

**Opposing sides**
But there is no difference between the curves. "It helps to answer the critics," Dr Parker told BBC News. "There are other kinds of temperature measurements, too, which could not be influenced by urbanization, such as warming in the oceans. Different methods of measurement can produce different rates of warming but they all point upwards."

Dr Myles Allen, from the atmospheric physics department at Oxford University, agrees: "It's pretty convincing," he said. "It's a sensible analysis which tests a prediction of the skeptical theory; and if it's right, we should see a greater effect on calm nights. But you should never underestimate the ingenuity of the skeptics to come up with a counter-argument."

One of the most prominent scientifically grounded skeptics is Fred Singer, president of the Science and Environmental Policy Project in Arlington, Virginia, US. "Many people have tried to correct for the urban heat island effect," he told BBC News. "I'm not sure David Parker has succeeded, but we admire his ingenuity."

**Selective data**

Dr Singer said that many weather stations in apparently rural settings might experience a certain amount of heating from nearby settlements or even roads. "The only true rural records are proxy records, such as the ones from tree rings," he argued.

Other types of proxy records—where natural processes are examined to provide an indication of past climate—include stalactites, fossil beds, ice cores, ocean sediments and glacial deposits.

The skeptics accuse the "warmers" of being selective in their use of these proxies to show that recent trends go beyond what would be expected from natural variation.

A separate research paper, also published in this week's Nature, has found a different kind of proxy—but definitely of human origin.

A French team, led by Dr Pascal Yiou, from the Climate and Environments Laboratory in Gif-sur-Yvette, examined parish records of grape-harvest dates in Burgundy going back to 1370.

"Grape harvest dates, which are closely related to temperature... may provide one of the longest uninterrupted series of regional temperature anomalies," the writes in the journal.

**Warmer periods**
The study focused on the Pinot Noir grape; and shows that in Burgundy, temperatures in the 1990s, although higher than average, were not that unusual—some years in the 1400s and 1500s had been warmer.

"This takes us back about as far as the comprehensive tree-ring records," commented Dr Allen, "and the nice thing is, there's an absolute record of what happened in which year. The obvious problem would be if there were changes in agricultural practice, or if the Pinot Noir grape had changed significantly over time."

Dr Yiou believes things have not changed: "The farming practices are the same; they still don't use any chemicals or anything like that," he told BBC News. "Also, we compared our temperature records from the grapes with tree-ring data from nearby places, and they showed the same pattern."

The one year which stands out as being exceptionally warm is 2003—the year of the French heat wave which claimed thousands of lives.

"It confirms 2003 was an unprecedented year in France," said Dr Allen. "But this only tells us about one region of France; somewhere in the world, extreme temperatures happen every year."

Dr Yiou now plans to expand his studies to Bordeaux and Italy, where there are similar records.

Tipping points

- Kirby, Alex "Earth warned on 'tipping points,'" BBC News August 26, 2004 http://news.bbc.co.uk/2/hi/science/nature/3597584.stm

The world has barely begun to recognize the danger of setting off rapid and irreversible changes in some crucial natural systems, a scientist says.

Professor John Schellnhuber says the most important environmental issues for humans are among the least understood. He told a briefing in Sweden that the Asian monsoon was one of the "tipping points" that could change very quickly. He said a better understanding of the risks was as important as the program to prevent collisions with asteroids. Professor Schellnhuber is research director of the UK's Tyndall Centre for Climate Change Research.

Professor Schellnhuber said 12 "hotspots" had been identified so far, areas which acted like massive regulators of the Earth's environment.

If these critical regions were subjected to stress, they could trigger large-scale,
rapid changes across the entire planet. But not enough was known about them to be able to predict when the limits of tolerance were reached.

"We have so far completely underestimated the importance of these locations," he said. What we do know is that going beyond critical thresholds in these regions could have dramatic consequences for humans and other life forms.

One example of a hotspot was the North Atlantic current, the ocean circulation pattern responsible for bringing warmer air to northern Europe, the collapse of which could lead to a very large regional climate shift.

  www.commondreams.org/headlines04/0907-05.htm

Millions of people across the globe are set to die early due to extreme weather events such as floods and heat waves caused by climate change.


Until recently, persons concerned about global warming, climate change and sea level rise have assumed that the process would be gradual. Now historical evidence shows that dramatic climate changes have happened many times in the past, and thus may in the future. New evidence indicates that global warming should be more of a worry than ever: it could be pushing the Earth’s climate toward sudden shifts.

Gee-Gees: Stayin’ Alive

- “Nature 'mankind's gravest threat”’ BBC News August 9, 2004
  http://news.bbc.co.uk/2/hi/science/nature/3549812.stm

We are making good progress in reducing the threat of asteroid impacts Giant tsunamis, super volcanoes and earthquakes could pose a greater threat than terrorism, scientists claim. Global Geophysical Events, or "Gee Gees," as they are nick-named, are not being taken seriously enough, they say.

Since 9/11 we have become acutely aware of the threat of terrorism. Governments worldwide are battening down the hatches and ratcheting up the security. But, in terms of grave threats, are we really looking in the right direction?
New book debunks environment, health myths

• “Issues exaggerated by activists for political agendas, say scientists,” International Policy Network June 22, 2004

From 23-25 June 2004, environment and health ministers from 52 countries will gather under the auspices of the World Health Organisation for a meeting called "The Future for Our Children" in Budapest, Hungary. The ministers will negotiate regulations to protect people, especially children, from environmental health risks.

In a new book—Environment & Health: Myths & Realities—10 expert scientific contributors analyze key environment and health issues being discussed by the WHO. The book challenges the conventional wisdom that human health problems (cancer, disease and even death) are being caused and exacerbated by modern industrial society.

The book offers an overview by scientific experts of the available scientific evidence concerning the impact of pesticides, dioxin, nitrates, radiation, endocrine disruptors, global warming and the precautionary principle on human health.

The contributors show that many environment and health risks have been exaggerated, to the detriment of scientific research and public policy.

Environmental scare stories in the media have been unbalanced and thus are psychologically and economically detrimental to the average person. When scare stories are used to influence government regulations, the result is frequently economic harm, a lack of prioritization with few or no benefits for people.

Lawsuits over Global Warming


The idea of suing over global warming is a new one but one that has gained prominence since a group of scientists made an analysis of the 2003 summer heat wave in Europe which cased 20,000 deaths. Recent trends suggest that
people are targeting energy companies, related corporations and the United States for global warming. In December 2004 the Inuit stated that they would demand a ruling from the Inter-American Commission on Human Rights regarding violations to their human rights as a result of global warming. If ruling is favorable, it could form the basis of a case against the US in International Court or class action suits against companies.

Other Issues of Note


“Studying the few and rapidly shrinking undisturbed ecosystems is important, but now is the time to focus on an ecology for the future. Because our planet will be overpopulated for the foreseeable future and natural resource consumption shows no signs of slowing, human modifications of the environment will only increase. Thus, a research perspective that incorporates human activities as integral components of Earth's ecosystems is needed, as is a focus on a future in which Earth’s life support systems are maintained while human needs are met.”


Companies are already swapping money for the right to emit more pollution, and cashing in on projects designed to suck up greenhouse gases. As this market booms, will it actually help to cut down on emissions?

• Eisner, Jane "Environmental Challenge: It's a culture war" Honolulu Advertiser, March 21, 2005, p. A10

Evangelical and other Christians may join environmentalists in the battle against global warming. The National Association of Evangelicals included a plank on "creation care" in a position paper issues in October 2004. Christianity Today said, "Christians should make it clear to governments and businesses that we are willing to adapt our lifestyles and support steps towards changes to protect our environment."

Population and Demographics

• Armas, Genaro "US elderly population could rise 80% by 2025, Honolulu Advertiser, February 6, 2002, p. A5

If trends continue, in 50 years, one of every three people in the world will be older than 60. Those 2 billion seniors will outnumber the world's youths.


World population is currently 6.4 billion growing to 7.9 billion in 2025 (24% growth), and 9.3 billion in 2050 (45% growth). Growth and growth rates are highest in Africa and the Middle East while growth is negative in Europe and Japan. From 2004 to 2050, population is expected to rise in the US from 294 million to 420 million while in Japan it may decline from 128 million to 101 million. China may increase from 1.3 billion to "only" 1.48 billion, while India may increase from 1.1 billion to 1.63 billion. Russia also may decline from 144 million to 119 million.

The world's ten largest countries, in order, in 2050 are projected as being India, China, the US, Indonesia, Nigeria, Pakistan, Bangladesh, Brazil, Congo, and Ethiopia.


'Masculinization' of Asia’s sex ratios is a phenomenon that may influence international politics. Could potentially lead to engineering more baby girls, an upswing of foreign "picture brides," kidnapping women for matrimony or reproduction, enforced pregnancy, a lift on the Chinese one-child-only policy and legalized polyandry; could potentially revolutionize family structure.

Water


More than 2.7 billion people will face severe shortages of fresh water.
The worldwide water crisis affects many fronts: sanitation, safe drinking water, increasing demands, its relation to global warming ... and yet water tables are decreasing everywhere. Certain to be a contested resource very soon; Mikhail Gorbachev warns that if we don't reverse the water crisis, conflicts will arise.

As the world population surpasses 6 billion, underground water levels are falling on every continent, most people on Earth are not getting enough water for the basic necessities of life. Rivers are drying up before they reach the sea, and plants and animals are undoubtedly suffering too.

The amount of water in the world is finite. The number of us is growing fast and $100bn a year would be needed to tackle water scarcity worldwide.

Right now 31 countries face water scarcity and its going to climb. The United States is even in trouble from water contamination to lawsuits over 'whose water is it." A crisis is around the corner. More than half of humanity will be living with water shortages, depleted coastlines, and polluted water.

Energy

End of Oil

The outlook for oil does not look good. The global economy and the developing world depend upon it and would be hard pressed to live without it. An increasing
number of analysts state that oil demands will not be met in the future; some say that OPEC will lose control and the pricing mechanisms will kick in with a vengeance.

- “New Oil Projects cannot meet World Needs this Decade.” ODAC/ The Oil Depletion Analysis Center/Press Release, 16 November 2004.

What will America look like after oil? With 4 percent of the population using 26 percent of the resources and with 600 million automobiles depending on oil as well as aircraft, chemicals, plastics, agriculture, heating and medicines. And what about oil derived additives like fungicides, fertilizers, pesticides, etc? At the same time, China is running around the globe, buying up oil. Could there be a war in the near future because of oil scarcity?

**Renewable Energy**


How will the United States bode in the future? Lots of clashes at the Capitol over oil, global warming and renewable energy. China is already on top of the crisis: It has passed a renewable energy law to boost clean energy policy and to secure its future, promoting alternative energies such as wind and water.


After 16 years, it's back. In fact, cold fusion never really went away. Over a 10-year period from 1989, US navy labs ran more than 200 experiments to investigate whether nuclear reactions generating more energy than they consume—supposedly only possible inside stars—can occur at room temperature. Numerous researchers have since pronounced themselves believers.
Hydrogen for all?


President Bush and Gov. Schwarzenegger are in favor of hydrogen car, but finding show that hydrogen cars pose dangers such as leaks, and the creation of carbon dioxide as a byproduct. Despite the downfalls and high cost it is likely to be less of an environmental strain than the vehicles that are currently being used.

Food

With advances in genetic engineering, “engineered foods”—in order to add disease inhibiting genes, reduce calories, or provide anti-aging benefits—will become commonplace. Restrictions on eating organic foods may occur due to fanatic “vegetable rights” or the prohibitive amounts of water used to grow them. Food production will become more challenging as oil dwindles, spurring new methods and energy sources for agriculture (wind? waves?). Another trend is growing consumption of non-food items, introducing new diseases to humans.

Engineered food


Lab results show molecular support for oleic acid, the main mono-unsaturated fatty acid in olive oil, found to suppress genes causing breast cancer. This could lead to engineering foods to contain anti-cancer genes, anti-aging chemicals, etc.

Nanofoods


Nanostructures are being developed as additives to foods, drinks, and vitamins. Self-assembling nanoparticles allow for more effective release of drugs or chemicals in foods and deliver the right chemicals to the right part of the body. These smart, programmable foods would be geared toward the needs of the consumer. Nanoparticles could also be used to locate dangerous substances or diseases—like cancer—with exacting precision.
Food Footprints


Every since we ran out of arable land in the 1960s, food is oil. Every single calorie we eat is backed by at least a calorie of oil, more like ten. Agriculture in this country is not about food; it's about commodities that require the outlay of still more energy to become food. Our factory-farm system is a living, continental-scale monument to Rube Goldberg, a black-mass remake of the loaves-and-fishes miracle.

Vegetable rights


Restriction on eating organically produced foods? Researchers are becoming aware of the learning processes of vegetables—could lead to backlash against farming, gardening, vegetarianism—perhaps even leading to the outlaw of consumption of organic food and enforced production of artificially engineered food. “People don't usually associate intelligence with weeds or cabbages. But plant scientists, taking advantage of new genetic information, have discovered a surprising level of what looks like brainy behavior in the vegetable world.”

Animal Cruelty in food production


At a time when torture and war are being justified, we see a countertrend around the world—the cruelty-free lifestyle. As often happens, the state of California is an early adopter of regulations against animal cruelty in food production. It has banned the production and sale of *foie gras*—goose liver pate—because the production of this delicacy involves force-feeding a bound duck or goose. Look for bigger targets in this movement. Many are taking aim at *Kentucky Fried Cruelty*. 
**Exotic foods as disease vectors**


Exotic foods are becoming increasingly popular, especially in China and other parts of Asia. These animals have the potential to be an emerging new vector for diseases such as SARS. 75% of all new human diseases in the last 20 years have come from animals. China has taken drastic measures to fight the “wildlife markets" where exotic animals are sold and performed mass killings of animals such as Civet cats.

![Image of animal skulls](image)

**The Return of Cannibalism?**

The voluntary suicide/killing cannibal case of Arwin Meiwes and Bernd-Jurgen Brandes sent shock-waves throughout the world. Had someone not reported another Meiwes advertisement on a web page, he might have continued. This gruesome episode of extreme human behavior exposes a possible emerging issue—that of consensual cannibalism, an act which is technically not illegal in many countries. There are apparently over 400 websites and chat rooms where potential cannibals can “order in.”

**Fisheries**

**Can the Oceans be Saved?**

Reports of two recent ocean commissions suggest it may be difficult to reverse catastrophic damage done to global fisheries, and to the ocean itself. The Pew Oceans Commission <www.pewoceans.org>, June 2003, and the US Commission on Ocean Policy <www.oceancommision.gov>, September 2004. Both agree that the oceans are in serious trouble and that there is an urgent need for effective action.


Formal analyses of long-term global marine fisheries prospects have yet to be performed, because fisheries research focuses on local, species-specific management issues. Extrapolation of present trends implies expansion of bottom fisheries into deeper waters, serious impact on biodiversity, and declining global catches, the last possibly aggravated by fuel cost increases. Examination of four scenarios, covering various societal development choices, suggests that the negative trends now besetting fisheries can be turned around, and their supporting ecosystems rebuilt, at least partly.


Fisheries have rarely been 'sustainable'. Rather, fishing has induced serial depletions, long masked by improved technology, geographic expansion and exploitation of previously spurned species lower in the food web. With global catches declining since the late 1980s, continuation of present trends will lead to supply shortfall, for which aquaculture cannot be expected to compensate, and may well exacerbate. Reducing fishing capacity to appropriate levels will require strong reductions of subsidies. Zoning the oceans into unfished marine reserves and areas with limited levels of fishing effort would allow sustainable fisheries.
EDUCATION

Left Behind


Christopher Edley, Jr. Professor of Law and Co-Director of The Civil Rights Project based at Harvard reacts to President Bush's proposed FY 2004 Education Funding Under the No Child Left Behind Act. In his statement, he questions whether the proposed request for $1 billion increase in Title 1 resources is anything more than "politics.".

Higher Education and International Competition

• Bollag, Burton “Graduate-School Applications From Overseas Decline Again,” http://chronicle.com/daily/2005/03/2005031006n.htm

Foreign applications for graduate study in the United States are down 5 percent this year, the Council of Graduate Schools reported on Wednesday. The drop follows last year's 28-percent decline and suggests, the council said, that "despite significant efforts by the federal government" and graduate schools, "international interest in graduate study in the U.S. is not rebounding."

According to results from the council's latest survey of its 450 member institutions, conducted last month, applications fell sharply from the two countries that send the most students to the United States—China, down 13 percent, and India, down 9 percent.

Calculated by discipline, applications were down by 7 percent in engineering and by 8 percent in business.

The three biggest causes for the decline, according to the council, were increased global competition for graduate students, tougher U.S. visa policies, and perceptions abroad that the United States is less welcoming of foreign students than in previous years.

In a written statement last fall calling for more spending on scholarly research, the council said that a falloff of interest by foreign students in studying in the United States is part of a worrying trend.

"While the U.S. still leads the world in research and discovery," the statement said, "our advantage is eroding rapidly as other countries commit significant resources to enhance their own innovative capabilities."
Bucking a trend that dates to the end of World War II, the number of foreign students applying to graduate and doctoral programs in science at American universities is declining broadly, according to a survey of 130 such programs released here today.

The findings came as the General Accounting Office, the investigative arm of Congress, reported that foreign students and scholars hoping to study science or certain technologies at universities in the United States must wait an average of 67 days to receive a visa. For some of them, the delays extend up to a year, the report said.

Some 586,000 overseas students enrolled in American universities last year, and organizations representing international students estimate they contribute more than $11 billion to the United States economy. Applications from Chinese students were down 50 percent this year.

American universities, which for half a century have attracted the world's best and brightest students with little effort, are suddenly facing intense competition as higher education undergoes rapid globalization.

The European Union, moving methodically to compete with American universities, is streamlining the continent's higher education system and offering American-style degree programs taught in English. Britain, Australia and New Zealand are aggressively recruiting foreign students, as are Asian centers like Taiwan and Hong Kong. And China, which has declared that transforming 100 universities into world-class research institutions is a national priority, is persuading top Chinese scholars to return home from American universities.

Foreign applications to American graduate schools declined 28 percent this year. Actual foreign graduate student enrollments dropped 6 percent. Enrollments of all foreign students, in undergraduate, graduate and postdoctoral programs, fell for the first time in three decades in an annual census released this fall. Meanwhile, university enrollments have been surging in England, Germany and other countries.
• Brender, Alan “South Korea Seeks Huge Increase in Number of Foreign Students,” http://chronicle.com/prm/weekly/v51/i26/26a03603.htm

The South Korean education ministry has announced a plan to almost triple the number of foreign students enrolled in the country's higher-education system during the next five years, from 17,000 to 50,000.

A spokesman for the Ministry of Education and Human Resources said the plan, dubbed the Study Korea Project, is designed in part to help South Korea become an education hub in Asia. This year 85 percent of the foreign students in South Korea are from Asian nations.

The government plans to increase the number of its scholarships for foreign students by 25 percent next year, encourage South Korean corporations to provide internships and guaranteed employment to foreign students after graduation, and establish Korean high schools and cultural centers in Vietnam, China, the Philippines, and other Asian countries to increase interest in going to college in South Korea.

The ministry also created a Web site to provide information about studying in South Korea (http://www.studyinkorea.go.kr) and will streamline procedures for issuing student visas.

South Korea will also offer incentives to universities that draw foreign students without attracting large numbers of illegal immigrants.

Education Funding

• Pulley, John L. “The Big Squeeze: Financial Outlook 2004: Colleges are caught between falling revenue from many sources and rising costs for services.” Chronicle of Higher Education
  http://chronicle.com/free/v50/i17/17a00101.htm

In 2004, colleges and universities will experience financial pressures that could reduce a hardened corporate CEO to tears. Revenue from endowments, fund raising, state appropriations, federal grants, and tuition paid by foreign students is expected to decline, be flat, or rise only slightly. Costs of new construction, employee health care, computer security, legal services, and debt service on borrowed money will go up, in some cases sharply. As a result, higher-education budgets in the coming year will be tight.

In addition, rising demand created by growing numbers of high-school graduates is further stressing the educational system. Colleges are under pressure to
expand their facilities at a time when they cannot keep up with maintenance on existing buildings.

•  Diament, Michelle “Public Mission of State Colleges Is Endangered by Increasing Competition and Privatization, Report Says” Feb 16, 2005

Increased competition among universities and trends toward privatization are threatening the public mission of state universities and colleges, according to a report scheduled for release today. The report, "Correcting Course: How We Can Restore the Ideals of Public Higher Education in a Market-Driven Era," was produced by the Futures Project, a five-year effort to examine the impact of market forces in higher education. The new report identifies four areas of weakness in public higher education: rising costs and unaffordable tuition, limited need-based financial aid, the lack of a sufficient way to measure success, and an increase in the proportion of research funds coming from corporate rather than government sources.

The changes mean that universities are competing for two types of students: those who will increase an institution's ranking in U.S. News & World Report and those who can pay the full cost of their education. In the process, state universities are sacrificing their public purposes, like providing need-based aid and conducting research free from corporate influence.

"It always seems really easy to turn to higher education and cut because we have tuition," he said, referring to a budgeting approach taken by state lawmakers. "But what has happened as a result is this pricing out of lower-income students, and that's not something we can do long-term. I think we need to realize that education is good for the public good."


America has fallen alarmingly behind other industrialized countries in access to and participation in college, which encompasses most education and training beyond high school, according to a study recently released by the Education Commission of the States (ECS).

According to the Organisation for Economic Co-operation and Development's (OECD) most recent figures, the United States has fallen from 1st to 13th among developed nations in college participation leading to a bachelor's degree in the last decade. The 13 percent increase in traditional college-age enrollments projected for the next decade has captured national attention, but the less-noticed story is that half the states likely will see either little or no growth or an actual decline in their numbers.
Adults aged 25 and older now account for nearly half of the more than 17 million students enrolled in U.S. colleges. Changing workforce needs and economic conditions are projected to drive up demand for college access among adults, which is currently projected to increase 13 percent by 2015.

If the nation were to match the participation rate of the top-performing states, the U.S. could boost enrollments by an additional 8 million students by 2015.

**Gender and education**

- “When it Comes to School: Girls Rule” Jan 07, 2005

Girls have eclipsed boys on state and national tests. They are more likely to stay in school and to graduate, and they demand less special attention than boys, data show. That marks a dramatic turn from the time when schools were urged to nurture girls' brains instead of their baking skills. School officials and experts now fear the effort to pull girls up to an equal footing had an unintended consequence. "Boys are lagging, and in my view we are seeing the tip of a very serious national problem," said Judith Kleinfeld, a psychology professor at the University of Alaska in Fairbanks. A U.S. Department of Education study last month noted the academic edge that boys once held has vanished, and "the issue now is that boys seem to be falling behind," said Education Secretary Rod Paige. "We need to spend some time researching the problem."

According to a count made on Dec. 1, 2003, boys comprise 66 percent of special education students in Indiana public schools, or 113,326 students out of a total of 170,765.

**Technology & Education**

As society and the economy changes, education needs to fulfill the new demands. Education needs to be all-encompassing, providing a more complete learning experience. Resourcefulness, creativity, and decision-making skills are necessary for future challenges. Education is becoming more inclusive and individualized which is part of the trend of customization and the emphasis on right-brain creativity.

Information technology is likely to dramatically reshape research universities—changing how they are organized, financed, and governed—and will also prod the institutions to emphasize instruction more heavily, a new report from the National Academy of Sciences predicts.

The report warns academe against "complacency" in the face of fast-paced technological developments and new competition from online universities and for-profit institutions. The report cautions that research universities should respond "with carefully considered strategies backed by prudent developments—not just to avoid extinction but to actively cultivate opportunity."

"Although the university has survived earlier periods of technology-driven social change with its basic role and structure more or less intact, the changes being induced by information technology are different because they alter the fundamental relationship between people and knowledge," the report states. The report predicts that information technology, by allowing students to learn both at a distance and at their own pace, will undercut two commonplace features of undergraduate instruction: lectures and a common reading list. Rather, students will collaborate online with one another and their instructor, the report says.

"The faculty member of the twenty-first century university could thus become more of a consultant or a coach than a teacher, less concerned with transmitting intellectual content directly than with inspiring, motivating, and managing an active learning process," the report states. "That is, faculty may come to interact with undergraduates in ways that resemble how they interact with their doctoral students today."

Academe also must adapt its approaches to governance to react more nimbly to technological changes, the report says. "It must begin to do so by reconsidering the academic culture that sometimes allows the demand for consensus to thwart action and in which consultation is often defined as consent."


MIT's plan to give away course materials online gains a few adherents

When the Massachusetts Institute of Technology announced an ambitious plan to give away online materials for every course, officials wondered whether other colleges and universities would follow suit.
The answer? Sort of. Nearly four years after the start of MIT’s OpenCourseWare project, several colleges met to unveil their own plans to publish extensive sets of course materials—such as syllabi, lecture notes, and quizzes—and encourage anyone to use them freely. There is one major difference: No one other than MIT is pledging to give away every course. And most of the newcomers expect to convert only a handful of courses per year to an open format.

The main reason is money. MIT officials are spending $6-million per year on the project, much of which is coming from grants from the William and Flora Hewlett Foundation and the Andrew W. Mellon Foundation. The project, which has already published more than 900 of MIT's 1,800 courses, is being touted as a success, as it has drawn down loaders from around the world who are using the materials as models for their own teaching or to learn on their own.

Proponents say the main beneficiaries are in the developing world, where students cannot afford textbooks and universities are looking for help setting up courses. MIT officials say that the materials are also inspiring more people to apply to the institute, as well as helping students at MIT decide which courses to sign up for.

Creative Education

• “Arts Learning and the Creative Economy,” www.newhorizons.org

At the core of organic education is student-centered learning, which focuses on lighting up fundamental human learning drives. Classrooms connect art and technology into cooperative projects with others. Organic education will be created by publishers, educators, technologists, artists. Learners in these communities will play characters in historical simulations from the middle ages, ancient Greece, World War II and other times, learning the driving issues of the day. They will fly into black holes, terraform planets, design species and watch them evolve, compose music, edit films and manage virtual businesses.

Computer games for learning

The use of computer games and learning software in schools is reaching a new high, as educators discover the engagement possible in immersive 3-D computer environments. It doesn’t hurt, either, that kids find learning more fun!

• “Schools Urged to Teach Computer Games”
  http://www.manchesteronline.co.uk/news/technology/s/134/134948_schoo ls_urged_to_teach_computer_games.html
Dr. Andrew Burn, associate director of the Centre for the Study of Children, Youth and Media, said: "Games are a legitimate cultural form that deserve critical analysis in schools just as film, television and literature do…. but full understanding only comes when children have the tools to create their own games."

- Stapelton, Andrew J. and Peter C. Taylor, "Why Videogames are Cool & School Sucks!" Paper presented at the annual Australian Game Developers Conference (AGDC), Melbourne, Australia, 20-23 November 2003

Academics are beginning to recognize and understand the potential of games as a means for promoting learning. Games as “objects to think with,” notions of “thought as play” and “hard fun,” fuel the trend to make education more engaging (and entertaining).


The Massachusetts Institute of Technology has launched the Education Arcade initiative, aimed at exploiting the educational benefits of videogames. The project plans to harness the talents of scholars, international game designers, publishers, educators and policy makers to develop videogames that would be fully incorporated into existing curricula. "We want to lead the change in the way the world learns through computer and video games," says MIT professor Henry Jenkins. "Our mission is to demonstrate the social, cultural and educational potential of games by initiating game development projects. We will also be information public conversations about the broader and sometimes unexpected uses of this emerging art form in education."


"Colleges, universities and the military will outpace corporations in rolling out innovative and effective learning programs. Computer games will increasingly be viewed as a new type of scalable content that will raise the bar on engagement and enable new types of skills to be taught," predicts Clark Aldrich, author of "Simulations and the Future of Learning," in a collection of expert prognostications assembled by eLearn."
• “Software Re-enacts Rwanda’s Genocide”
  http://news.bbc.co.uk/1/hi/world/africa/4185713.stm

New computer program to teach children about genocide and decision-making is being piloted (Edinburgh classroom). The student plays the role of a UN peacekeeper his/her decisions affect outcome of game.

• “Class Meetings Move to the Virtual World”
  http://www.wired.com/news/games/0,2101,65052,00.htm

A company called Linden Lab, creator of a 3D digital world “Second Life,” has announced a program called "Campus: Second Life," which allows college and university faculty to use the simulated online environment to host class sessions. In the Second Life world, participants choose characters who can do things such as change forms, build vast structures, and fly. Aaron Delwiche, an assistant professor at Trinity University, uses Second Life for a course in developing games. He described the tool as "a shared virtual experience," saying it provides his students with an opportunity to experience the kinds of electronic media they plan to develop later.

• Kumar, V. Richi “Dr Raj Reddy makes PCs talk the masses language”
  December 20, 2004 The Hindu Business Line
  www.thehindubusinessline.com/2004/12/21/stories/2004122102610500.htm

Dr. Raj Reddy, Head of Robotics and Artificial Intelligence Lab, Carnegie Mellon University, is on a mission to bridge the digital divide but with a difference—empowering illiterates to actually use computers!

Having started with the design of a low-cost innovative entertainment-cum-communication device referred to as PCTV, that builds on open source software, Dr Reddy is now engaged in building artificial intelligence into speech recognition software and language process synthesis. These would enable even a person with language barrier actually access the benefits of a computer, while reaping the advantages of entertainment.
SOCIETY

Age Cohorts


• "Meeting the Millennials" *SIDEBARS* October 2004
  http://online.bcit.ca/sidebars/04september/index.htm

The Millennials have arrived on our campuses. "Millennials are those born in 1982 or later. They expect to have access to the same technology they have now—computers, cell phones, pagers, and PDAs. This group likes to be connected. They also prefer the interactive to the passive, hence their preference for the Internet over television. The biggest difference between this current generation and previous ones is the type of technology they know intimately. This generation is the digital group—the technology they grew up with is the technology we are getting used to as adults."


Youth don't care much about the ethnicity of friends or spouses so that new ethnic "blends" are emerging.

• Hara Estroff Marano, "A Nation of Wimps," *Psychology Today*, Nov/Dec 2004; Downloaded Feb. 20, 2005 at

Over-monitored, over-protected, not even a skinned knee or bad grade is now allowed to mar the childhood of the Jones’s little precious. The cell phone makes it far worse by acting like an eternal umbilical cord—perpetual access to parents infantilizes the young, keeping them in a permanent state of dependency, fearful of failure and the unknown.

“US Kids Boning Up on Good Manners”

• http://www.keepmedia.com/pubs/AFP/2005/02/04/719049?from=search&criteria=US+kids+boning+up+on+good+manners&refinePubTypeID=0

Etiquette schools are the newest after-school activity for kids. Fuelled by two-career parents with no time to teach their children themselves, or who just worry
about being embarrassed in a fancy restaurant, old-fashioned behavior academies are enjoying a boom across the country.

**Lifestyle/Relationships/Work**

**Rankism**


In the on-going attempts to overcome racism and sexism in North America today, we are overlooking another kind of discrimination that is no less damaging and equally unjustifiable. It is a form of injustice that everyone knows, but no one sees: discrimination based on rank. Low rank—signifying weakness, vulnerability, and the absence of power—marks you for abuse in much the same way that race, religion, gender, and sexual orientation have long done.

When discrimination is race-based, we call it racism; when it's gender-based, we call it sexism. By analogy, rank-based discrimination might be called "rankism."

**Focus on the Kids/Family**

U.S. mothers feel frustrated and overloaded with career and family responsibilities. They feel guilty both at home and at work because they're not able to achieve the level of perfectionism they feel is expected of them (whether by society or self-imposed standards). Flex-schedules in the workplace and midlife sabbaticals are replacing the traditional 30-year career. Another component of this trend is the unprecedented amount of time and attention focused on children and their (over)organized activities. Kids are smothered by constant surveillance due to ubiquitous “watcher technology,” from cradle to classroom to college.

**Family First Generation**


Many young workers grew up in an era of rising divorce rates and corporate layoffs. "They saw the 'rewards' parents could get for work loyalty," Galinsky says. Gen X'ers and Y'ers also saw stressed-out boomer parents multitasking,
Galinsky says. Employees who have options such as working at home are more satisfied and willing to put in extra effort, IBM's Mike Shum says. He says he's getting more calls from other firms asking about IBM's flexible work options. "As the tick of time goes on, and these young people move in, a different attitude will permeate the workplace," he says. "There will be more blurring of work and home life."

Flexible work/ temporary retirement


The pension crisis and longer life expectations are forcing policy makers and employers throughout the world to rethink retirement. Instead of personal life being divided up on the basis of age, many people are making the transition between work and learning or leisure at many different ages. Traditional retirement may well be replaced by greatly expanded choice, and by a dramatic shift in how old age is viewed. This could also ease the impact of a potentially severe shortage of experience workers in the next decade when baby boomers start hitting their sixties. Taking extended breaks from work may be part of this trend, including company policy that allows for it in order to gain employee loyalty and prevent burnout.

The changing nature of childhood: “Work readiness” credential for high schoolers


New York is about to become the first state in the nation to issue a “work readiness” credential to high school students who pass a voluntary test measuring their ability to succeed in entry-level jobs, state officials say. Employers have complained for years that too many students leave high school without such basic skills, despite the battery of exams —considered among the most stringent in the nation—that New York requires for graduation. The work-readiness credential will make hiring decisions easier and cut employee turnover.
Day for Night

- Wilson, Hugh “The beneficial powers of darkness: Artificial light illuminates our lives, allowing us to work or play through the night. But, we toy with our body clocks at severe risk to our wellbeing.” THE GUARDIAN Sunday, Mar 20, 2005, Page 9

For many of us, night has become day. We work, travel, shop, exercise and socialize in hours that used to be reserved for relaxation and sleep. Time is a limited resource and, to make full use of it, the night has been illuminated and occupied. Even when we do sleep, street lamps and security lights pierce the darkness.

But our freedom from the natural constraints of day and night may have come at a price. According to a growing band of scientists and doctors, many of us are no longer getting enough darkness in our lives. The theory is based on a simple premise. Our biological rhythms evolved in a time before artificial light, to take advantage of both bright days and dark nights. By succumbing to the temptations of 24-hour living, and ignoring or reducing our natural dark time, we could be putting our health at risk.

Mainstreaming Alternative Lifestyles

While still a case of “two steps forward and one step back,” gays are entering the mainstream of American media discussion and thought. In television shows, cartoons, court cases and insurance claims, homosexual lifestyle choices are becoming commonplace, no longer the taboo subject of the past.

Companies ignoring gay marriage benefits


The Massachusetts supreme judicial court’s November 2003 marriage ruling, which took effect May 17, 2004, suggested that all marriages should be treated equally, adding that the commonwealth may not deny the “protections, benefits, and obligations conferred by civil marriage to two individuals of the same sex who wish to marry.” But FedEx and the other companies argue that the state court’s ruling does not apply to the health benefits they offer their employees. The companies argue that because the so-called Defense of Marriage Act in 1996 limited marriage to opposite-sex couples under federal law, they don’t need
to recognize Massachusetts' same-sex marriages in their federally regulated health plans.

**Schism over Gays**

- Barr, Robert "Dispute over gay issues leads to Anglican split," *The Honolulu Advertiser*, February 26, 2005, p. B4

The Anglican Church is in the midst of a bitter dispute over allowing gays to serve as clergy and whether or not to support gay marriage. Many churches could be in for similar fights. It is too bad that Henry VIII is not around to advise the church leaders on the sanctity of marriage.

**Homophobia and intolerance of alternative lifestyles in children’s shows**


Christian activist groups say the innocent cartoon characters are being exploited to promote the acceptance of homosexuality. One video is a remake of the 1979 hit song *We Are Family* using the voices and images of SpongeBob, Barney, Winnie the Pooh, Bob the Builder, the Rugrats and 100 TV cartoon stars. Growing paranoia of homosexuals by the religious right seems to be one more indication of intensifying culture wars. Even PBS is shying away from airing children’s shows containing gay or lesbian couples even when that’s not the focus of the program. Secretary of Education Margaret Spellings denounced PBS for spending public money on a cartoon called “SugarTime!” with lesbian characters, saying many parents would not want children exposed to such lifestyles.

**Legal Issues**

“A lesbian who split with her partner after adopting the woman’s biological children must pay child support, the Indiana Court of Appeals has ruled.” After adopting her partner’s children in 1997, the woman tried to vacate the adoption a few years after their breakup. Although the court ruled last month to define marriage as a union between a man and woman, responsibility in this case is blind to sexual preference and lifestyle.

NPR’s Science Friday, Feb. 11, 2005: “Forbidden Knowledge,” 89.3 FM Hawaii Public Radio broadcast, 9:30 am Honolulu, caller “Dave.”

Caller said he’s a graduate student/researcher at University of Fairbanks. He thinks it’s viable to identify the gene that “causes” homosexuality, but research has been squelched on this because of public policy implications. A conference was to be held on this topic at University of Maryland a few years ago and was cancelled due to the controversial nature of the subject and its ramifications.

Pets

Pets as members of the family—and often as a substitute for spouse or children—could lead to fights over usage of open park space, legal rights, spending community resources on animals vs. human citizens; robotic advances and genetic engineering may lead to talking mechanical or real pets with the resultant “rights” issue connected to consciousness and communication.


The legalization of same-sex marriages may prepare the way for even more radical unions in the future, according to Canadian professor Stephen Bertman. He foresees the possibility of marriage between humans and their household pets or even inanimate objects such as a beloved car or computer. Many people already name pets as beneficiaries to their estates or make arrangements for them to be taken care of upon the owner’s death. And many states require pets to be licensed, with proof that the pets have had rabies shots and/or have been neutered. Marriage with pets would be an extension of these state-sanctioned responsibilities (and even more likely if pets can talk—see above).
• “Friends Launch Pet Memorials Online”
  http://www.manchesteronline.co.uk/news/technology/s/140/140797_friends_launch_pet_memorials_online.html

Permanent memorials for pets are being created online via websites such as apetcemetery.com and attracting users from both America and the UK.

• “Talking Pets” A vision.

Use bioengineering to design your ideal pet with vocal cords and genetic ability to learn speech (if pre-selection of traits is possible for human fetuses then why not animals?). Interspecies communication with dolphins and apes has been studied for decades, this just takes it to the next logical step …

Music- Easy Listening


First there was one and a half years of silence. Then three notes of John Cage's piece "Organ2/ASLSP" were played on a 139-year-old organ in St. Burchardi Church in Halberstadt, Germany—G sharp, B and G sharp. The piece will be finished in 639 years, and the music for the next 72 years has already been mapped out.

Sports

Professional sports are underscored by scandal, drug abuse and unprecedented pressure placed on young children to excel in athletics. Excessive drug abuse—and penalties for their use—is an emerging trend that will continue to gain strength, as well as stricter definitions of gender, particularly for women athletes.

Elective Surgery

• Johnson, Steven "A Cut Above" Wired 13.03 March 2005
  http://www.wired.com/wired/archive/13.03/start.html?pg=2

A surgery that has been used to repair tendons in Baseball pitchers' elbows has been so successful that many pitchers have more velocity after the surgery. Batters who have had laser-eye surgery are seeing the spin of the ball better than those with 20/20 vision. But why wait until you've had an injury to get these
surgeries if they offer a competitive advantage? The next trend in sports might elective surgery to enhance performance.

"Great athletes have always been freaks of nature (think of Michael Phelps' extra long torso or Ted Williams' superhuman vision), but this kid will be something else: a freak of science. He'll throw pitches with such speed that even a player with surgically enhanced eyes won't be able to catch up to them. As he mows down batter after batter, a chorus of dissenters will complain that he has an unfair advantage. And the sport will have to make some hard decisions: Either let athletes have full recourse to the wonders of modern science, or draw the line at bionic arms."

Drug Testing & Steroid Use


Two dozen athletes caught for doping, more then twice the number of the previous Olympics. Meanwhile, the sport of baseball attempts to rid itself of drugs and steroids by random, unannounced drug tests in hopes of cleaning up the sport and returning it to its wholesome reputation. Pro athletes now learning the tips and tricks of using legal steroids to bulk up and improve their performance.

Gender definition

- “Zimbabwe female athlete ‘was man’.” Feb 22, 2005 http://news.bbc.co.uk/2/hi/africa/4249949.stm

Doctors report that a 17-year-old ‘female’ track athlete from Zimbabwe is really a man. She says that she was born with both make and female sex organs but later retained only female genitalia so is now technically a woman. This blurring of sex for women athletes may lead to stricter definitions of gender.

Pre-pubescent Professionals
What age is too young? A 9-year-old is attracting attention in Brazil as the next big thing in soccer. He is being recruited by professional adult teams, raising questions about whether kids have a real choice in the matter. Another author discusses the enormous amount of money spent on high school sports particularly in comparison to the meager percentage spent on academics.

Beliefs & Practices

Return to pre-Christian and New Age belief systems alongside Religious Right

Old ideas are becoming “nouveau” again; tribal and pagan groups on the upswell at the same time the Christian Right gains even more momentum. Erosion of the separation of church and state: the Bush Administration is giving money to religious organizations, mega-churches, mega-malls, even mega-communities. A belief that the Christian Rapture is eminent fuels the righteous. This portends a decrease in religious tolerance … yet a simultaneous exploration of alternative societies to create a more peaceful world order seems to be occurring as well. Non Judeo-Christian religions are becoming mainstream—although Islam is usually presented negatively in the media. Not surprisingly, there’s an increased use of Internet technology to enable traditional religious customs.

Collapse of traditional religion & rise of Mysticism


Christianity will be eclipsed by spirituality in 30 years. Study after study appears to prove that people are increasingly losing faith in the Church and the Bible and turning instead to mysticism in guises ranging from astrology to reiki and holistic healing. More and more people describe themselves as “spiritual,” fewer as “religious” and, as they do so, they are turning away from the Christian Church and looking inwards for the meaning of life. “It’s a shift away from (the idea of) a hierarchical, all-knowing institution and a move towards (having) the freedom to grow and develop as a unique person rather than going to church and being led.”

Popularity of books such as Brown’s *DaVinci Code* delineating the ancient belief in matriarchal society, an upswing of new covens, renewed interest in Gaia (Earth Mother) beliefs, “lifestyle” churches such as Trinity seems to be the flipside of the trend toward radical right Christianity.

“Christian Capitalism”


America's Christian entrepreneurs are creating mini-mall sanctuaries with distinctly "safe" Christian themes and values. “The developers’ pitch to busy modern Christians: Get all your spiritual – as well as shopping – needs fulfilled at one central location. On a deeper level, though, the Christian malls seem to be responding to a desire to establish self-sustaining – what some critics call insular – religious communities that extend beyond Sunday morning communion.”

“Gift economies”—sharing vs. capitalism


Pioneering French anthropologist Marcel Mauss studied “gift economies” like those of the Kwakiutl of British Columbia. Rather than societies based on barter as economic historians posited, anthropologists were discovering societies where economic life was based on utterly different principles, and most objects moved back and forth as gifts—and almost everything we would call “economic” behavior was based on a pretense of pure generosity and a refusal to calculate exactly who had given what to whom. Such gift economies could on occasion become highly competitive, but when they did it was in exactly the opposite way from our own: Instead of vying to see who could accumulate the most, the winners were the ones who managed to give the most away.

Although buying and selling may not simply be eliminated in a modern society, a market ethos could. Work could be co-operatized, effective social security guaranteed, and, gradually, a new ethos created whereby the only possible excuse for accumulating wealth was the ability to give it all away. The result: a society whose highest values would be “the joy of giving in public, the delight in generous artistic expenditure, the pleasure of hospitality in the public or private feast.”
Traditional religious customs enabled by Internet technology


“Muslimmatcher.com” is one of several online Muslim matchmaking services that have sprung up in the United States and internationally in recent years. They are used by hundreds of thousands of Muslims worldwide, most of whom live away from families willing to arrange a marriage, or who prefer to find a spouse by themselves. This is part of an ongoing shift in the way younger Muslims approach marriage. Influenced by their non-Muslim peers, many are dating and marrying outside their religion, without the consent of their parents. For those who want to marry another Muslim, the Internet can bridge a divide, allowing them to do things previously forbidden, such as communicate privately before marriage.

Mortification of the flesh

• “Kid wants to lose leg or an arm,” Columbus Ledger-Enquirer, Feb. 25, 2005, Dear Abby, p. D5.
• Amputee website: http://amputee-online.com/amputee/

From all-body tattoos and multiple piercing, the guilty West is moving toward self-imposed body mutilation through breast impalement to removal of healthy limbs (called “apotemnophilia”). Huge ramifications for insurance companies, medical ethics and rights of an individual over his/her body.

CyberCulture

Individualization & Personal Customization

The trend towards customization is strong in everything from one’s “information environment”—the news you hear and the websites you opt to see—to cosmetic and medical products to online custom-made machine-shop parts and even clothing. There’s also a resultant backlash to the cocoon of personal technology (called “bubbling),” which could lead to a generation of anti-techno Luddites.
After a report that showed men aged 18 to 34 had deserted network television, interactive marketers prayed that they’d show up online instead. Two new studies lend support to that idea.

Earlier this week, comScore Media Metrix released a more general study of men in the elusive age group. The study from the Reston, Va.-based audience measurement company found that the nearly 27 million Internet-using U.S. males aged 18 to 34 spent an average of 32 hours per person online in September, fully 17 percent more than the 27 hours the average Internet user spent online during that month. They also whipped through more pages, generating an average of 3,370 page views a month, compared to the 2,670 consumed by the average Internet user.

The report adds fuel to the theory that the recently reported double-digit decline in broadcast television viewing by males in this age group is the result of increased Internet use.

Customized online worlds

- Active Worlds website: http://www.activeworlds.com
- The Palace website: http://www.thepalace.com

Online interactive group games—which often combine real life activities with computer interaction—may become as or more interesting than “real” life. One example: Active Worlds, the web’s most powerful Virtual Reality experience, lets you visit and chat in incredible 3D worlds built by other users.


Some critics see the rise of individualized technologies and on-demand service leading to the dissolution of community and an insulated, alienated public. “By giving us the illusion of perfect control, these technologies risk making us incapable of ever being surprised. They encourage not the cultivation of taste, but the numbing repetition of fetish. And they contribute to what might be called “egocasting,” the thoroughly personalized and extremely narrow pursuit of one’s personal taste. In thrall to our own little technologically constructed worlds, we are, ironically, finding it increasingly difficult to appreciate genuine individuality.”
Information filtering as buffer from alternative/disagreeable ideas


If, in an immersive information environment, one can filter out all dissident ideas, articles, people, i.e., those which disagree with one’s own point of view, this could limit thought development, growth, discovery, shared experience. Narrowing of thought—the death of a public sphere—is reflected in trends toward customized information filtering, even home-schooling. Customization as cocoon to insulate one from discord … a Brave New World.

“Bubbling”—Social isolation due to 24/7 technologies


Blogs on PDAs, MP3 players, podcasting, cell phones—“just how far into your own digital navel can you gaze before you drop out of any sort of face-to-face interaction?” While these gizmos are marketed as things that can bring us together (like being in 24/7 contact via cell phones), they often serve to isolate. Each of us populates a personal tech-bubble of one. Solo tech-travelers often are unaware that others occupy the same dimensions as them—that’s why they often bump into others, in their cars or on foot. Not only leads to social isolation and loss of common courtesy, but is also the cause of accidents by oblivious drivers, walkers, bikers, etc. In that case, do we sue the clumsy individual … or the company who made the device?

Backlash to “bubbling”—Return to face-to-face interaction


Graphic artist Marc Horowitz printed his own real cell phone number in a Crate & Barrel catalog last fall with the message: “Please call 510-872-7326; Marc Horowitz wants to meet you for dinner.” Thousands called him, and eventually he added an email and web contact. Now he’s taking a year off to have dinner with dozens of them. He says, “It’s really listening and knowing that everybody has something important to say and that their stories are fascinating … We just plug
into our computers and think that’s the way to live, but old-fashioned face to face is what it’s about.

**Customized real-world objects**


A free program from eMachineShop.com lets you design 3-D objects (such as car parts, door knobs, etc.) in metal or plastic and then order them online. The software checks to determine whether a design can be made, tells the customer how much it will cost, and sends the design to a "real world" machine shop for manufacturing.

**Made-for-you meds and cosmetics**

- William E. Evans, Mary V. Relling, “Moving Towards Individualized Medicine with Pharmacogenomics,” DOI: 10.1038/nature02626, *Nature* 429, 464—468, 04/05/27

Medicines and treatment that is fully tailored to an individuals genetic and biological make-up will soon be common. These treatments should be much more effective and with fewer risks than the “one-size-fits-all” of current pharmacology. MedQuest Pharmacy will utilize GeneLink’s patented DNA Collection Kit® and genetic profiling technologies to provide its physician network with an innovative line of personalized skin care and nutritional products based on DNA testing and analysis.

**Cell phone hacking**

Hackers are starting to write malicious software—the first is called “Skulls”—for cell phones. “Mobile phones are a tempting target because they have become a part of everyday life … ‘smart phones’ with Internet connections provide an easier pathway for cell phone infections. Few phones come equipped with protection against malicious software, though some companies are starting to install it.” Could lead to the end of cell phone usage as we know it, or at least a blow to “convergence”—the push to combine all one’s communications links in the same box.

Information overload and loss of ability to think, focus


“Information environmentalism” is a phrase coined by computer scientist David Levy to describe his desire to stop and think about the consequences of pervasive computing. “We’re losing our ability to focus,” Levy feels, “as well as our sense of our physical bodies.” And, he adds, “our workload and speed [do] not leave room for thoughtful reflection.” This mad rush of ubiquitous information causes “information pollution,” which could lead to a backlash against the onslaught of info tech gadgets and communications.


“Rather than being rooted in genetics, however, ADT [attention deficit trait] is purely a response to the hyperkinetic environment in which we live. Indeed, modern culture all but requires many of us to develop ADT. Never in history has the human brain been asked to track so many data points. Everywhere, people rely on their cell phones, e-mail, and digital assistants in the race to gather and transmit data, plans, and ideas faster and faster. One could argue that the chief value of the modern era is speed, which the novelist Milan Kundera described as "the form of ecstasy that technology has bestowed upon modern man." Addicted to speed, we demand it even when we can't possibly go faster. James Gleick wryly noted in *Faster: The Acceleration of Just About Everything* that the "close door" button in elevators is often the one with the paint worn off. As the human brain struggles to keep up, it falters and then falls into the world of ADT."

The future of ubiquitous computing: surrogate brain/searchable memories

- MyLifeBits Project
Cheap massive storage will allow people—individuals, families, groups of friends, communities of practice—to extensively document their images, videos, events, conversations, meetings, work, etc. A searchable multimedia database of lives (imagine running a Google search on your life?!) Such exact memory of events will help people with memory loss as well as document for posterity what really happened or what was actually said. Virtual Reality avatars combined with audio recordings "could eventually form the basis for 'meet the ancestor' style educational tools, where people will quiz their ancestors on what happened in their lifetimes."

Blogs (Web Logs)

The Internet has created new forms of mass and personal communication channels. Online journals—called blogs—have decentralized information publication and news creation; some consider them a new form of journalism. Blogs also provide a platform for more innovative curriculum development in the classroom, and for the general public to participate in decision-making.


“The TV networks and major newspapers now face spirited competition from blogs (i.e., Web logs) offered by independent political commentators. Washington lobbyist Ellen Miller says that blogging "takes the media out of the hands of the corporate world and puts it into the hands of guys with computers"; Glenn Reynolds, a law professor and blogger (Instapundit.com) says the blogsphere has become an "idea farm" for the established media; Andrew Sullivan says blogging is "like having a giant communal brain"; and Tom Bevan (RealClearPolitics.com) says that blogging means that ‘if you have something to say that's interesting, you will eventually be heard.’”

- “Academics Give Lessons on ‘Blogs”
  http://news.bbc.co.uk/2/hi/uk_news/education/4194669.stm

Academics and students collaborate on blogs at Warwick University, which gives its students and staff free space on its server to start their own blogs. Some worry about the unstructured nature of blogs and the copyright issue of others unlawfully using the created works posted there.
Nearly all the information from Iraq is filtered by politicians or the media. But there is at least one way to get the news straight from Iraqis themselves, via online journals or blogs. Iraqis are using the blogs to express their thoughts, confusion and fear—a “free” channel to express their experiences.

Johnson, Steven "Mind Share BLOG SPACE: Public Storage For Wisdom, Ignorance, and Everything in Between." Wired June 2003, Issue 11.06.

"What happens when you start seeing the Web as a matrix of minds, not documents? Networks based on trust become an essential tool. You start evaluating the relevance of data based not on search query results but on personal testimonies. ("This page is useful because six minds I admire have found it useful.") You can research ideas or breaking news by querying the 10 people whose opinions on the topic you most value—what Cory Doctorow calls an ‘outboard brain.’"

**Everything Bad is Good for You? The Sleeper Curve**

This final cluster was inspired by Steven Johnson’s latest book due out in May 2005, *Everything Bad is Good for You: How Today’s Popular Culture is Actually Making US Smarter.*

“It's just me trying to marshal all the evidence I can to persuade the reader of a single long-term trend: that popular culture on average has been steadily growing more complex and cognitively challenging over the past thirty years. The dumbing-down, instant gratification society assumption has it completely wrong. Popular entertainment is making us smarter and more engaged, not catering to our base instincts.

“I call this long-term trend the Sleeper Curve, after that famous Woody Allen joke from his mock sci-fi film where a team of scientists from 2029 are astounded that 20th-century society failed to grasp the nutritional merits of cream pies and hot fudge.”

*www.stevenberlinjohnson.com/movabletype/archives/000211.html*

We have noticed this trend in many other areas including the legitimate use of psychedelic drugs, the benefits of alcohol consumption, and the educational
value of video games. This trend also points to what we see as the emerging “Dream Society” (Iconomy, Right-Brain World, Conceptual Revolution) in which content, meaning, and “cool” become the main drivers of economic growth supplanting the information economy.

- Gilbert, Matthew “Outside the box, and over our heads: Frequently, TV is smart. Too smart.” March 6, 2005. http://www.boston.com/ae/tv/articles/2005/03/06/outside_the_box_and_over_our_heads/

Has popular culture been getting more complex over the years? Many point to shows like HBO’s Deadwood with its intricate plot twists and non-linear development as signs that much of our entertainment is actually putting us through a “cognitive workout.” The success of screen-writer Charlie Kaufman also points to the prospect of cognitive benefits from popular culture.

- Philipkoski, Kristen “Long Trip for Psychedelic Drugs.” September 27, 2004. wired.com/news/medtech/0,1286,65025,00.html?tw=wn_tophead_1

Apologies to Timothy Leary? Psychedelics, once prohibited for any use, are becoming more and more legitimized as psychological treatments. The USFDA has allowed research into the use of MDMA (ecstasy), Ketamine and a host of other drugs to gauge their effect on various psychological disorders, especially post-traumatic stress disorder. “Several studies in the US are planned or are under way to investigate whether MDMA, LSD and psilocybin, the active ingredient in magic mushrooms, can treat conditions ranging from obsessive compulsive disorder to anxiety in terminal cancer patients.”

We could soon see psychedelics prescribed by doctors and expect a fight from anti-drug officials in state and federal governments. Expect debate similar to the medicinal marijuana issue. Could these “stigmatized” drugs shift focus away from medical marijuana, or bolster the arguments for its use?

"Can a drink a day prevent mental decline? The finding that older women who consume moderate amounts of alcohol score better on cognitive tests suggests that it can.

An investigation has revealed for the first time that the brain can benefit from consumption of both beer and wine. In the early 1990s, researchers often referred to the 'French paradox' to support the idea that wine promotes good health."

"The phrase refers to the fact that French people have a lower risk of heart attack than Americans do, even though their diets contain similar levels of fat. More recent studies have also linked modest beer consumption with a decreased risk in heart disease. But although researchers know that moderate drinking benefits the heart, there haven't been any significant studies of whether moderate alcohol intake has any effect on the brain."

• “Study Shows Improved Visual Perception from Video Games”
  http://online.wsj.com/article/0,,SB105413319494664400,00.html

"A study conducted at the University of Rochester indicates that playing high-action video games can increase a person's performance on a range of visual tests. The tests included locating the position of a blinking object, counting simultaneous objects on a screen, and identifying the color of an alphabet letter. In the study, subjects who spent several months regularly playing action video games consistently performed better on the tests than those who did not play the games. The study did not address the question of how violence in video games influences those who play them. The authors of the study said the results suggest that such video games could be beneficial to people with visual impairments or to soldiers training for combat. Military experts confirmed the latter notion, saying that soldiers who have spent many years playing action video games are often better at certain combat skills, such as operating long-range unmanned aerial vehicles."

• “Net-Porn is Good for You, Say Academics” The Australian 17 Aug 2004
  http://australianit.news.com.au/articles/0,7204,10468780%5E15306%5E%5Enbv%5E,00.html

Pornography is good for people, says the academic leading an Australian taxpayer-funded study of the subject. Alan McKee and his colleagues Catharine Lumby and Kath Albury are conducting the Understanding Pornography in Australia study. The Labor party is considering forcing Internet service providers to filter hardcore porn in order to protect children using home computers.
McKee says: "The surprising finding was that pornography is actually good for you in many ways. When you look at people who are using it in everyday life, over 90% report it has had a very positive effect" because it had taught them to be "more relaxed about their sexuality," made them think about another person's pleasure, and made them less judgmental about body shapes.

**Today’s affliction, tomorrow’s necessity?**

If we are entering an age where creativity and expression are the central economic drivers, might some behavior deemed antisocial now, be encouraged in the schools over the next few years. We certainly saw a shift from the time when sitting in front of a computer was the bastion of the geeks to now when it symbolizes a vital position in the information economy.

- Jeffrey Zaslow, “Reliance on Ritalin may dull child’s potential for genius,” *Honolulu Advertiser*, Feb. 6, 2005, F1, F6 (from *Wall Street Journal*)

Drugs for Attention Deficit (Hyperactivity) Disorder sap kids of creativity, inspiration. Ritalin and other AD(H)D drugs calm kids down but also quell out-of-the-box thinking, perhaps “sapping tomorrow’s workforce of its potential genius.” Thomas Edison, Albert Einstein, Salvador Dali and Winston Churchill are now believed to have had Attention Deficit Hyperactivity Disorder (ADHD).

- “Mild autism has ‘selective advantages’ Asperger Syndrome can improve concentration.” Interview with Vernon Smith (Nobel Prize-winning economist) [http://www.msnbc.msn.com/id/7030731/](http://www.msnbc.msn.com/id/7030731/)

CNBC: There are people who think that a number of highly influential executives may have Asperger's or are on the autism spectrum. Is that society making a judgment or is it coming to realize that there are different kinds of minds?

Smith: I think it's different kinds of minds, and the recognition that certain mental deficiencies may actually have some selective advantages in terms of activities. We've lost a lot of the barriers that have to do with skin color and with various other characteristics. But there's still not sufficient recognition of mental diversities. And we don't all have to think alike to be communal and to live in a productive and satisfying world.

“The incidence of autism is increasing at an alarming rate. Only 10 years ago, it was estimated that autism affected one out of 10,000 children. Two years ago, it was estimated that autism affected one out of 250 children. In April of 2002, the United States Congress declared autism a national epidemic. In January of 2004,
the CDC, along with the American Academy of Pediatrics, estimated that one in 166 children are currently being diagnosed with autism."