

**Supreme Court
State of Virginia
Environmental Scan
1997**

Hawai'i Research Center for Futures Studies

James A. Dator

Jill Keesbury

Devin Nordberg

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EXECUTIVE SUMMARY

In 1995, the Hawaii Research Center for Futures Studies prepared a scan for the Virginia Judiciary. At that time we cited many interesting, fascinating, and scary trends. For example, we discussed the progress of the last UN conference on population as signalling a continued increase in women's rights to choice and reproductive health worldwide, the meteoric expansion of the Internet and a cybersociety around it, and the price some of us are paying for our fiscal policies.

These trends remain important issues now, and we will not repeat them in this scan.

Still other aspects of our 1995 scan, like the rapid growth of nonwhite populations throughout the world, the enormous challenges that people are putting to nation states, and the possibility of nanotechnology as the next major technology, were part of our 1995 scan, and are still important, but are now seen more clearly as these trends have developed in new and interesting ways. All of these topics will be revisited with new focuses, new ideas, and updated source material.

In this scan, we will focus on many changes and new developments from our previous scan for the Virginia Judiciary. Some of the new material includes the necessity of governing evolution, the likely end of many forms of control and authority, new demographic trends, new medical possibilities, and several rays of hope regarding the environment. But first, the highlights:

One of biggest changes is the rapid rise of futures studies and in general the growing popular awareness of the future, in part because "The Year 2000" looms, but mainly because of the recognition by more people, in business and government, of the absolute necessity of looking ahead, of the growing fluidity and impermanence of all present ways of doing things.

Also the futures field itself is rapidly maturing. Within the last two years, Futures, edited in the United Kingdom and published on the Continent, has grown considerably in quality and quantity to extend its lead as the premiere futures journal. Macmillan Publishing Company recently released a massive Encyclopedia of the Future. Long-time futurist and Professor of Sociology at Yale, Wendell Bell, this year completed a two-volume work on the Foundations of Futures Studies which has become both a comparative best-seller and an instant classic. Richard Slaughter, of Sydney, Australia, who has written profusely over the years about futures studies as a discipline and as a practical and important way to think and orient all human institutions and behavior, published in 1996 a three-volume work on The Knowledge Base of Futures Studies. The leading francophone futurist, Hugues de Jouvenel, edited OSCAR: Futures studies in Western Europe: A Directory of Individuals and Organizations, published by Futuribles International, in Paris. And the journal, American Behavioral Scientist, requested the Hawaii Research Center for Futures Studies to edit a special edition of the ABS on "Futures Studies in Higher Education." This will be out in 1997 or 98 and will feature contributions by thirty futurists from all regions of the world who are actively engaged in teaching futures studies at the university level.

Futures consulting firms are reporting more business than they can responsibly respond too, resulting in a mini-explosion of individuals and firms offering to provide information on the future for a fat fee. Indeed we have been told “by reliable sources” that many generals and admirals who have been involved in long-range and often future-oriented activities for the Pentagon recently have retired and have set out shingles proclaiming themselves to be consulting futurists.

Futures studies is clearly a major growth industry.

At same time, total misunderstandings of what futures studies is abound. Newspapers and magazines continue to have articles and whole issues devoted to the future without the participation of a single futurist, something they would never do if they were considering the past, or some aspect of science and art. The resulting publications, while often interesting, provocative and probably better written than they would be by most futurists, are uniformly unhelpful and probably misleading.

University of Maryland Physics Professor, Robert L. Park's OpEd piece in the New York Times, 30 December 1997, titled “Future Schlock” (itself a prime example of genuine future schlock), is just one recent example.

Also, consider the recent rise and proliferation of TV psychics who make a fortune telling people what they already know about themselves!

Moreover there is a clear rise in the US of religious belief (as in the number of Americans who say they believe in God) and in religious participation, albeit in many extremely diverse and transitory forms, a point we will discuss below.

A second major change we noted is in our sources for information about the future. While books, magazines, and especially various marginal publications (and zines) remain useful (and we here especially acknowledge the value of Future Survey [from the World Future Society], Future Times [from the New Zealand Futures Institute], Zukunfts Forschung [SZF] (Swiss society for futures research) and Pro Zukunfts [Robert Jungk Library in Austria]) the role of the internet was much more important this year than ever before (although it played an important role in our 1995 scan for the Virginia Judiciary).

The net itself is maturing, and is becoming a very important source of revenue after many years as a money sink. Now, expectations that the net will become THE major place for advertising (including job seeking) seems likely. And in many ways, most of the other hyped statements about the net seem to be coming true. It may well be the harbinger of a world brain--of the “noosphere” anticipated half a century ago by Teilhard de Chardin.

But there is a growing problem with the reliability (truth quotient) in what is found on the net, and with the vulnerability of the net (and its users) to sabotage, disinformation, violations of privacy, overcapacity leading to lengthening downtimes, and all the rest. We will comment on some of these issues below as well.

Substantively we noted these changes since our previous scan for the Virginia Judiciary:

--Global capitalism is clearly the only game in town. There is presently no credible alternative. Socialism still lurks, and various varieties of self-sufficient greens and indigenous movements exist, but none seem to have the critical mass necessary to become major challengers to capitalism.

There are good and bad things about that which we will also discuss below. One of the major problems is that the economic boom is also directly emmiserating growing numbers of people in the US and worldwide. While there have never before been so many rich (if overworked) people, there also are growing numbers of very poor and permanently unemployable people, many of whom are (so far) “invisible” to the rich.

(But see, "Continued and Expanding Economic Boom?" "Harbingers of impending economic catastrophe?" and "The End of Work?" below)

--Probably the biggest new development, especially given what was just said about the global economy, **is the rise of environmental awareness and action.** The US stands almost alone in resisting this global movement. Even though both the President and Vice President officially admitted the existence and looming seriousness of “global climate change”, and did send active representatives to the Kyoto Conference, the US Congress seems determined to reject the (rather timid) treaty resulting from that conference. And much of US business is hysterical in its insistence (supported by many well-placed and effective advertisements) that enactment of the treaty--or any similar measures--will bring the American economic boom crashing to an end.

However, there is equally impressive evidence that more and more businesses, certainly worldwide, but even in the US, have discovered that “being green” means being more competitive. Indeed, one way to read the resistance of American business is that it is so far back on the curve of energy efficiency, nonpolluting activities, recycling and the rest that it **MUST** actively resist environmental improvements in order to buy some time to catch up with the growing green efficiency of the rest of the world. Companies which are not as green as possible may simply lose out to those who are.

Moreover, American business may have no choice even if Congress acts to protect them. Having achieved all of the savings they can by “downsizing” (indeed, having gone too far in many cases, inspite of continued downsizing by many companies), the only way left to be globally competitive may be by going green.

--Sources and evidence

Insurance companies leading in concern with environmental disasters. (“Can you tell the difference between Greenpeace statement and a Swiss insurance company?”)

Livio DeSimone, et al., Eco-Efficiency, The business link to sustainable development. MIT Press, 1997 (Growing number of firms are finding that it is good business to be ecologically sensitive) World Business Council for Sustainable Development

New business network called “The Future 500” dedicated to environmentally-sensitive businesses

Mark Hertsgaard, “Our real China Problem.” Atlantic Monthly, November 1997.
Environmental crises.

Ernst von Weizsacker, et al., Factor Four: Doubling Wealth, halving resource use. The new report to the Club of Rome. Earthscan, 1997. And Paul Hawken, et al., Natural Capitalism. Hyperior Press 1998. (Amory and Hunter Lovins are also co-authors for both) The efficiency revolution. Good economics to be green (energy efficient, recycling, nonpolluting). Being green saves money. It doesn't cost more.

Similar perspective in Andrew Hoffman, From heresy to dogma: An institutional history of corporate environmentalism. New Lexington Press, 1997. Four stages: Industrial environmentalism (1960-70). Regulatory environmentalism (1970-82) , Social responsibility (1982-88). Strategic environmentalism (1988-93). Makes it sound like a done deal, which it is not!

--A third new development is demographic. One aspect has to do with some reasons for restrained optimism about slower global population growth than was originally feared--though that growth is still a big challenge to the 21st Century, and continued slower population growth is by no means guaranteed into the future. (See the section on demographics below)

Another demographic aspect is generational. The World War II generation is (with the defeat of Bob Dole) almost totally gone from the political scene, and soon will be totally gone from the Earth. Few live any more who literally “remember Pearl Harbor”--or the undisputed might of the US as the champion of the world after the end of the Last Good War.

The Baby Boomers continue to occupy more and more positions of leadership (and will present a huge challenge on their retirement in the early 21st Century), but more interesting in the longer run is the emergence of Generation X, Generation Next, and the as yet unlabeled cohorts presently in grade school and younger, all of whom seem to be very different indeed from both the World War II cohorts who dominated the last fifty years and the Boomers who will be dominant over the next few decades. It is the young cohorts who will live in the 21st Century, and they view that reality through very different eyes from all of those presently in power. As the pace of change increases, generational differences correspondingly widen. (see, “Cycles and Cohorts: Good News in the early 21st Century?,” and the lengthy section on “Demographics”, below)

--The fourth development may be the most important in the long run. And that is the growing (but by no means widely recognized) fact that **“nature” is dead, or rapidly dying**, and that all of the challenges of the foreseeable future are human-made, entirely or to some very significant degree. Even the severity and number of “natural disasters” and “acts of God” are exacerbated by human past and present activities in ways never before the case.

The admonition ten years ago of Walter Truett Anderson that the major challenge to all people and their governments will be to learn how “to govern evolution” is becoming more frequently repeated, and more apparent.

We would say that this recognition might replace the sterile deadlock between the “Limits to Growth” and “Grow or Die” controversies of the past thirty years. While it is this argument that still prevails in whatever public discourse there might be about the future, there is also much more discussion apparent among the scientific and concerned community about the necessity of “managing” everything.

(See Appendix, “Evidence and Arguments concerning the necessity of Governing Evolution”)

--And yet this recognition flies in the face of a fifth and extremely visible and growing awareness, which is the continuing decline of the nation-state as an effective institution of governance. There are so many economic, technological, and ideological forces working both internally and externally, and so many voices raised in opposition to all governmental activities--at all levels, the most local as well as the most global--that one has to wonder how any of the problems of the future can possibly ever be “managed.”

Of course, one growing strain of intellectual argument is that things organize best when left “out of control.” There are both ideological and what seems to be scientific bases for that contention. So America, if not the world, seems poised to engage in one of the most dramatic and unproven ideologically-driven social revolutions (the dissolution of the nation-state) ever undertaken since Lenin stepped off the train at the Finland Station and re-engineered the ongoing Russian Revolution towards his Marxist dreams. (See, “End of Authority?” below)

--It is a tenet of the Manoa School of Futures Studies that technological change is the “prime mover” of all other social and environmental change--a working out of Marshall McLuhan's famous aphorism, “We shape our tools, and thereafter our tools shape us.”

It is to be expected, then, that we should look most carefully at what is happening with new emerging technologies and the widespread diffusion of older technologies.

Clearly if there was ever a success story for futurists being “right” in their forecasts and anticipations, it is with **electronic communication technology**. “Computers” (certainly a misnomer if there ever was one) have fulfilled almost every fantasy futurists might have had for them. The one exception might be the “paperless office” (an apparent failure of prophecy which is trotted out whenever articles about the fallacies of prediction are mentioned, on par with the fact we don't all have individual airplanes, contrary to the expectation of someone in the 1940s).

Yet we would say that even the “paperless office” (as well as “office-less papers”) seems a pretty good bet over the 21st Century as electronic input and output devices continue to improve with every passing day. High quality, reliable, and inexpensive voice-recognition software is already here (though still in early stages of development and diffusion), and will be used in more and more ways. Typing is almost certainly going to be a lost art in the 21st Century as voice, touch, point, and even simply “look” input devices proliferate and improve.

At the same time, “print” does not have a bright future either, as output becomes also vocal, iconic and pictorial.

Certainly, with the completion of the Human Genome Project in the next few years we will see an extraordinary rapid increase in cases and controversies dealing with all sorts of **genetic manipulation**.

As we write this, a situation, already typical, but clearly on the rise, is unfolding. A Chicago physicist who is interested in helping infertile couples have children has said he intends to assist in the cloning of a human, in order to act before national or state laws are passed outlawing cloning (“Scientist set to beat ban on cloning of humans,” from the Washington Post, in the Honolulu Advertiser, January 7, 1998, p. 1). We will be surprised if state and national courts are not soon involved in this dispute (probably before anyone in the Virginia Judiciary reads this), being just one of countless examples where judges are asked to be both applied futurists and social ethicists in areas where the public is basically uninformed and for which there is no clear legislative guidance.

Following close on the heels of genetic technology is **nanotechnology**.

In futures circles, nanotechnology has been looked at as a “wildcard,” meaning a low probability, high impact event in the future. But as science progresses, the inevitability of nanotechnology becomes more and more clear. Simply put, nanotechnology involves thorough control of the structure of matter at the molecular level. When this ability is gained, nanotechnology will completely replace industrial technology.

Nanotechnology, the construction of things molecule by molecule, works in theory and has no shortage of existing examples; namely, all forms of life. DNA works as a programmed molecular machine, following an incredibly complex set of instructions. When we engineer “hands” that are small enough to move molecules around, we will make diamond out of carbon, program molecular computers, create molecular assembly systems, and program those systems to produce still more molecular assembly systems. While the probability of this emerging issue has changed, its forecasted impact is still extremely high. (See the section on nanotechnology)

Source: Eric Drexler, B. C. Crandall, ed., Nanotechnology: Molecular speculations on global abundance. MIT Press 1996

Finally, developments in materials is an often-overlooked aspect of technological (and hence, social) change. “**Smart materials**” which “remember” prior or preferred positions, resist extreme temperature and pressure, and are comparatively cheap and easy to manufacture (and recycle) out of relatively abundant resources, are becoming more and more prevalent.

Source: “Smart materials” Scientific American
(<http://sciam.com/explorat9ion/050596.explorations.html>)

(See also “Science and Technology” below)

The end of “authority”?

If we stand back and see how these various “separate” strands are impacting upon one another, one of the most important patterns we discover might be called “the end of authority,” or at least “the end of expertise.”

The basic American political belief has always been a kind of libertarianism: “that government is best which governs least.” “Don’t tread on me.” “God and my rights”.

Libertarianism--so named as well as in spirit and action--is making a clear, strong resurgence. Much of the popular support for the Republican Party over the last several decades has been because that Party has promised to “get government off your back and out of your pocketbook” (though, perhaps, into your bedroom, television set, and internet websites since Republicans think it is OK for government to regulate morality, which is not a Libertarian belief).

On the other hand, the Republican coalition is fragile (see evidence elsewhere) and many people find libertarianism or even “freemen”-style individualism increasingly appealing.

There is also growing scientific support for this, in the work of chaos theory and complexity theory, probably best expressed in a book by Kevin Kelly titled, Out of Control. It is good to be out of control, and bad to try to control others. Complex systems cannot be created, or controlled, from the top down. They can only be grown and “chunked” from the bottom up. How can football fans leave a stadium so quickly and easily without being organized, led, and directed by some leader? Getting that many people to move in concert is so complicated a task that even the most sophisticated computer program can't describe it. And yet it happens--spontaneously and in an individually self-directed manner. Who needs government? Why can't all social behavior be similarly autonomous, orderly, and purposeful, if only left alone and allowed to self-organize, many people want to know?

There is also a technological component to this. More and more people who once were accepted gatekeepers to information and activities no longer are. The internet is opening up the world to people in truly chaotic and random forms and ways that often fly in the face of what an expert thinks is the proper and necessary way to learn or to do something--and this quite apart from any concerns about pornography or sedition.

Journalists prided themselves in believing that they sought out the facts and presented “all the news that's fit to print” to readers. Walter Cronkite could confidently end his evening television broadcast with the statement, “and that's the way it is.”

If it did not appear on TV (or in print), it was not news, and did not happen.

Of course, this was not really “factual” or “objective”. But it did effectively enable a very small number of skilled professionals to shape the minds and behaviors of a nation.

Now, things can and are reported by millions of people over the net. TV news viewers and newspaper readers dwindle in number (as TV “news” becomes more sensational and “exciting” in order to hold readers, and newspapers try to provide more local community information for the same reason).

Journalists are wondering about their future.

Librarians were one of the earliest groups to recognize that their role was going to change with the new media, anticipating by a decade the concerns of journalists and others. Most of them have tried to protect their interests by bringing the computers, CD roms, and internet into the library, and by maintaining their gatekeeper function as reference librarians.

But it cannot last.

Some university professors are finally beginning to understand what the Virtual University will mean to them, although most professors are in total denial.

Doctors are learning that their patients are curing themselves by sharing their symptoms on the web, and trying out all sorts of recommended cures and nostrums.

And, recently, even priests and other clergy are beginning to discover that by going online, their parishioners have easy access to all sorts of religious ideas and practices from which they previously could have been safely shielded.

Respect for politicians and journalists declined in tandem and is at an all time low. “The problem is not that politicians have lost touch with voters but that both groups have lost touch with reality.” (Jonathan Schell, “The Uncertain Leviathan” Atlantic Monthly, August 1996)

Nation-states seem to be disintegrating, and may be replaced either with a new global “medievalism” of armed enclaves, or with networked global-localism. (John Browning, Wired, January 1998.) Wired magazine generally is also the first outpost of the global “Netizens”, a development related to age-cohort changes as well. Woody Harrelson of the McLuhan/Reform Party says “Let Washington tend to the atoms of aging baby boomers while we aim our browsers at bits of the future.”

“Leadership may disappear as politicians become all too connected to the voters. The netizens of the future will have to take their jobs seriously. Are we ready for this much democracy?” asked Howard Fineman, Newsweek, January 27, 1997.

“If everyone can see the world from a different angle--if everything is relative and the dominant reality virtual--where's the place called America?” “If you don't have a 'known' perspective, you can't judge anything.”

“Judge,” indeed! How much longer does the judiciary believe it can be immune from these trends? Indeed, isn't ADR and the growing use of the “multi-door courthouse” a harbinger of

even bigger changes to come in the “authority” (not to say, “authoritarianism”) of most courts and judges?

Sources:

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Bruce Tonn and David Feldman, “Non-spatial government,” Futures, No. 1, 1995

Tom Ferguson, “Health care in cyberspace: Patients lead a revolution”, Futurist, Nov-Dec 97)

Michale Lesk, “Going Digital: Electronic Libraries will make today's internet pale by comparison.” Scientific American, March 1997

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Time Magazine article on internet and religion, December 1996.

Ron Sellers, “Nine global trends in religion,” Futurist, Jan/Feb 1998

The end of the Republican and Democratic Parties?

There is evidence that the Republican Party will soon come to an end with the break up of the strange twenty-year coalition between local-protectionist, religious-right populists on the one hand and global free-trade secular capitalists on the other. It is possible the populists will join the Democratic Party, in coalition with the unions there, in common opposition to the globalized

economy. But the Democratic Party is still presently the home of the “free-thinking” “liberals”, and of people who still believe there is a positive role for government to play in addressing social (and environmental) problems.

So it is possible the unions, minorities (primarily blacks) and the few remaining populists in the Democratic Party will split from that party and join with their Republican populist comrades to form a racially-integrated, religiously-oriented, local-protectionist (and probably thus anti-immigrant) party, while the “liberals” in the Democratic Party will join with the global capitalists in the Republican Party to form a big money, secular, globally-oriented party.

This leaves out the racially-intolerant white militants. But they have been out of both parties anyway recently, and basically given up on the official political system, having gone underground with their “common law” beliefs and practices.

(Suggested by an article by Walter Russell Mead on the Promise Keepers in Worth magazine, December 1997)

Continued and Expanding Economic Boom?

There were a slew of articles in the last year or two proclaiming the end of economic cycles and thus of recessions and depressions. Unless something stupid were to happen politically (or some extraordinary natural disasters), we should be in an extended period of increasing and global prosperity.

In April 24, 1997, the IMF semi annual World Economic Outlook, anticipated fast growth, low inflation, falling budget deficits world wide though the end of the 20th Century.

Two items in the very prestigious and influential journal, Foreign Affairs. July-August 1997--one an article by Steven Weber, “The end of the business cycle?” and the other a book review by Paul Krugman, “Seeking the rule of the waves,” of David Fischer's, book The Great Waves, gave readers many reasons to believe that endless prosperity might well lie ahead forever.

At the popular level, master scenario-weaver, Peter Schwartz, along with Peter Leyden, described in great detail the “Long Boom” which they anticipate might extend through 2020. They did list, as a sidebar, ten things that might go wrong (none of which was the possibility of the “Asian Tiger” economies collapsing, however), but they considered them decidedly less likely than the “Long Boom.” (Wired, July 1997)

On the other hand, these writings could be propaganda to convince us that the devastating instabilities of our economic system are not a worry, and that we should just go shopping.

How does the global--or American--economy look to you now as you read these words?

The Information Economy Brings Good News

We have heard endless hype about how we are now in an "information economy," but just exactly what this means for our future is generally unexamined. Fortunately, Paul Romer, a UC Berkeley economist, has laid out the principles behind this new economy.

Compare a copper mill to a knowledge industry like Microsoft, for example. A copper mill expends a certain amount of capital for each bit of copper, and sells each bit for a certain price to compensate for its cost. A copper mill experiences diminishing returns on its product as the copper in each mine becomes depleted, opening up space for competitors who have started new mines rich in copper.

But Microsoft, on the other hand, spends enormous amounts of money for one program. After that, however, each copy they make might cost 50 cents or less, and they can make a countably infinite number of copies with increasing returns for each one. As our society moves more toward knowledge products that use minimal tangible resources and are infinitely replicable, there is hope of economic expansion occurring alongside reduced resource use.

On the downside, the Microsoft example confirms Romer's fears that the information economy leads to increased opportunity for monopolization, even if these monopolizations are more temporary. (See the section nanotechnology, as the software that will program nanotechnological construction will also follow this logic.)

Still, the information economy offers additional strength to nonprofit interests. Consider the rise in shareware, where people post software that they have written to the Internet for anyone to copy for themselves. Suddenly, one person with a good idea could reach millions at nearly no cost. With this increase in our ability to share, look for copyright suffering numerous difficulties in definition and enforcement, and remember the battle cry of the information revolutionary, "Information wants to be free!"

(source: interview with Paul Romer www.strategy-business.com/thoughtleaders/97110)

Corporate Currency

As information technology enables economic use of things like e-cash, smart cards, and sophisticated accounting systems, more and more corporations are starting, in effect, their own currencies. Pepsi points, Northwest Airlines World Perks, frequent flyer miles, McDonalds bucks, Disney dollars, and many others are popping up all over. Many of these companies are linking their currencies together, creating their own exchange rates! Some futurists are asking why money has been the purview of government for so long, and believe that the information economy will enable corporate currencies to privatize currency, although they probably won't do so until major governmental currencies go under. The politics behind people attempting to legislate some stability or guarantee to their currencies will face new challenges, to say the least.

Harbingers of impending economic catastrophe?

(Or at least more of the same boom and bust patterns of the market)

Asia's economic woes impacting world markets

The recent economic crisis in Asia brings to the surface a lot of important issues regarding global capitalism in the contemporary world. Crises are usually good at exposing core values and beliefs of participants, and forcing them to reevaluate their methods of operation. Because the current Asia crisis is so rich in these issues, we dedicate a lengthy review of it below.

From: Kim Scipes <sscipe1@ICARUS.CC.UIC.EDU>

January 7, 1998

The IMF has changed its official estimation for global economic growth this year: Where it predicted in September 1997 that world economic growth would be 4.3% in 1998, it lowered that in December, saying growth would only expand 3.5%; in fact, Vicki Barnett, writing in a front page story in the "Financial Times," says, "...the Fund admitted yesterday that it had previously been too optimistic and that its new estimate **COULD TURN OUT TO BE TOO HIGH IF JAPAN'S ECONOMIC SLOWDOWN WORSENERD**" (emphasis added) (FT, "IMF says Asian Crisis will cut back world growth", December 22, 1997: 1). In the same story, a chart based on IMF data, shows that the IMF now expects the US economy to decline a further .2% below its earlier projection. In another story the same day, Vicki Barnett reports that the US trade deficit is now projected by the IMF to expand by over \$50 billion to \$230 billion (Vicki Barnett, "IMF World Economic Outlook: Trade patterns set for big shift", FT, Dec 22, 1997: 3).

Another story on the trade problems for the US: "The near certainty that the US trade deficit will be driven sharply higher by the economic crisis sweeping through Asia has profound economic and political implications. [para] Some US workers could lose their jobs, and employers could feel pressure to hold down wages. The profits of multinational corporations have already been put under pressure by the downturn in Asia, unnerving investors and analysts are forecasting more bad earnings news. *** [para] The Asian crisis is already altering trade patterns. In South Korea, for example, US goods are nearly twice as expensive, when bought with the country's devalued currency, as they were at the beginning of the year. That is squeezing US exporters ranging from auto-part makers to farmers and could imperil the jobs those exports support. [para] A survey last week by the National Association of Manufacturers found that four out of five manufacturing executives anticipated significantly lower exports next year because of the problems in Asia and the resulting currency fluctuations. Among the industries that the association expects to be particularly hard-hit are electronics, telecommunications equipment and capital goods." Richard W. Stevenson and David E. Sanger, "Ghosts of Deficits Past: America Relives the Fear--Flood of Asian Imports Set to Swell Trade Gap", International Herald Tribune, Dec 22, 1997: 11.

In a story about the US trade deficit in October, there is an interesting paragraph: "But in an ominous sign, the US deficit with Japan soared to the highest level in two and a half years. Analysts are forecasting increased deficits with all Asian countries as the US economy feels the effects of the financial turmoil that has engulfed the region." And further, "Economists are predicting an even bigger deficit for 1998 as Asian imports flood the country, made suddenly cheaper because of the sharp currency devaluations that have occurred in Asia. A rising US trade deficit is expected to be the main adverse impact felt in the United States by the economic turmoil that has forced South Korea, Indonesia and Thailand to run to the International Monetary

Fund for huge loan guarantees to stabilize their countries. Forecasters say Asia's problems could cut economic growth in the United States by one-half of a percentage point or more next year.” “Record Exports Cuts U.S. Trade Gap: But Deficit With Japan Soars, a Sign That Asia Crisis Hurts America”, International Herald Tribune, Dec 19, 1997: 13.

In another story in the International Herald Tribune (IHT), Alan Friedman writes “Hours after releasing its official economic outlook Monday, the Organization for Economic Cooperation and Development changed three of its key 1998 predictions, with officials blaming the instant revisions on the fast changing financial crisis in Asia. *** In a published report on Monday, the OECD forecast a 1998 growth rate of 2.9 percent among its 29 member nations. But at a press conference here [Paris-KS] Monday afternoon, the OECD's chief economist revised the forecast down to 2.5 percent.” And, note this: “Economists said that the OECD's change of forecasts was a sign that the crisis in South Korea and other Asian nations is moving so rapidly THAT INTERNATIONAL ORGANIZATIONS CANNOT KEEP UP WITH EVENTS” (emphasis added.) Alan Friedman, “OECD Adjusts Figures in '98 Growth Forecast: Asia Meltdown Forces Changes in Predictions,” IHT, Dec 16, 1997: 13.

We can see how drastic the economic crisis has both hit various countries, and to see how the IMF has changed its forecasts for economic growth: real Gross Domestic Product (GDP) growth in 1988 for Thailand was projected at 7% in May 1997 and 0% in December; for Indonesia, it was 6.5% in May, but 2% in Dec; for Malaysia, it was 7.8% in May and 2.5% in December; South Korea was 6.2% in May and 2.5% in December; and the Philippines was 6.2% in May and 4.3% in December. Additionally, the IMF's chief economist Michael Mussa said “the IMF forecast could be revised downward again if problems with business confidence and with the financial system persisted.” Mussa further admitted that the lower figure for Korea--2.5% growth--“was 'on the optimistic side'.” Vicki Barnett, “IMF World Economic Outlook: Trade patterns set for big shift”, FT, December 22, 1997: 3.

In an opinion piece, US economist Robert Samuelson sees Japan as a big part of the Asian problem: “All of Asia's economic casualties--South Korea, Thailand, Indonesia, Malaysia and the Philippines--need to export their way to recovery. They have depleted their foreign exchange reserves and accumulated huge overseas debts. To buy imports and service their debts--in other words to keep their economies running--they need to earn more foreign exchange. [para] A healthy Japan would help by providing an expanding market for their exports, but that will not happen. Even optimistic economic forecasts see meager growth for Japan in 1998. The International Monetary Fund , for example, recently predicted only 1 percent. [para] *** At best ... Japan will not buy many extra exports from the rest of Asia. The United States and Europe will have to absorb most of the increase. [para] A Japanese recession would make everything worse. Japan would buy less from Asia and try to sell more itself. All countries would have a harder time reviving. [para] This defines the economic menace posed by Japan. Asia's economic downturn might feed on itself: too many sellers chasing too few buyers.” Robert J. Samuelson, “Stubborn Japan Is a Big Part of the Asian Problem,” IHT, Jan 2, 1998: 6.

“Japan's economy has come to a standstill as higher employment and incomes have not led to increased production, a [Japanese] government report said Monday. [para] The Economic Planning Agency, in an analysis of Japan's economy in 1997, said the economy's cyclical trend

toward a recovery had weakened in the latter half of the year. *** [para] The agency also mentioned a possible deterioration in Asia's economic crisis as a factor that could put pressure on the Japanese economy.” Agence France-Presse, “Japan's Economy Stalled, Agency Says”, IHT, Dec 30, 1997: 11.

Two more recent comments from opinion pieces in the International Herald Tribune:

“As a former hedge fund manager enjoying a sleepy sabbatical from the art of speculation, I was shaken by the Asian crisis of 1997. It shattered the whole structure of expectations that had long governed the behavior of global investors. [para] This is a profound moment for the psychological state of the world economy. [para] We can no longer wake up in the morning and say, 'No matter what happens, I know Asia is still growing strong and keeping the system rolling.' Now the myth of Asian invincibility has collapsed. We have lost a foundation stone. [para] Will this lead to global disaster? That is not at all clear, or even likely. Will American stocks decline? I do not know. It depends upon what people come to believe. *** [para] From the early 1980s on, it was an article of faith that Asia was a miracle. Savings, investment, education--all of the right ingredients for economic success were present. [para] For years, strong economic performance and rising asset prices inspired investors, commentators and economists to uncover even more good news about Asia wherever they looked. Today, where one everyone saw efficiency and vitality, the image is one of widespread corruption and waste. [para] How could anything so good turn so bad so quickly? **IF ASIA'S VIBRANT ECONOMIES CAN COLLAPSE, WHAT OTHER ASSUMPTIONS ABOUT ECONOMIC CONDITIONS ANYWHERE CAN WE COUNT ON?**” (emphasis added). Robert A. Johnson, “World Leaders Have to Be Seen to Stimulate Demand”, IHT, Dec 29, 1997: 8. (At the end of the article, it identifies Johnson as “chief economist of the [US] Senate Banking Committee in 1987 and 1988, is a former managing director at Soros Fund Management.”)

“There has never been a crisis like the one besetting Asian financial markets. It is international in origin and is a crisis of the private sector, not of government finances. Its nature explains why IMF rescue packages have had scant success. [para] The currencies of South Korea, Indonesia and Thailand **HAVE ALL FALLEN FASTER AFTER IMF INTERVENTION THAN THEY DID BEFORE IT** [emphasis added]. That is not surprising. The IMF is treating the crisis as a series of national events that require draconian local policies, rather than as **AN INTERNATIONAL LIQUIDITY DOMINO EVENT. THIS WRONGHEADED VIEW WILL CAUSE RECESSION AROUND ASIA AND PERHAPS THE WORLD**” [emphasis added]. *** [para] Because of trouble at home or simply because of head office worries about Southeast Asia, the overseas banks reduced their commitment, setting off a repayment credit squeeze hitting at least two Asian countries directly and knocking on to others. *** [para] [In South Korea] the won has collapsed not because of trade or even innate corporate problems but because of a sudden withdrawal of dollar liquidity. *** [para] [The IMF] has never suggested that its Western members' role in the debacle be studied. Nor has it questioned the wisdom of unfettered money flows. Yet it is obvious that a **SUDDEN CHANGE IN PERCEPTIONS OF ASIAN RISK WAS AN IMMEDIATE CAUSE OF THE CRISIS** [emphasis added]. [para] Instead of lecturing Asia, IMF Managing Director Michel Camdessus could ask what the Banque de France did to stem the huge rise in French banks' short-term lending to Asia in the 18 months to mid-1997.” Philip Bowring, “What About Unwise Lenders?” IHT, Dec 29, 1997: 8.

Now, let's flash forward to this morning's NYT:

“As the United States has focused on rescuing South Korea, the emergency programs to stabilize Thailand and Indonesia have begun to unravel, raising new fears about the effectiveness of the International Monetary Fund's prescriptions for stabilizing large regions of Asia. [para] With investors still stampeding out of Asian markets, the currencies of Thailand and Indonesia have plummeted to new lows, defying months of efforts to restore confidence and making it more costly for companies to repay crushing debts denominated in dollars and Japanese yen. [para] On Monday, Thailand announced that it would ask the IMF to ease the terms of a \$17.2 billion bailout package. Indonesia has so far refused to honor several key conditions of its nearly \$40 billion rescue package. *** [para] 'There's no question that we're in deep trouble again in Southeast Asia,' a senior adviser to President Clinton said today. 'The political problems are getting a lot more complicated. And the markets are having trouble sorting out which countries are tackling their problems, and which are not.' [para] Yet the economic magnitude of Thailand and Indonesia pale by comparison with that of South Korea, and all three pale in size compared with Japan. **WASHINGTON'S REAL FEAR IS THAT RENEWED ECONOMIC INSTABILITY AMONG THE RELATIVELY SMALL ASIAN COUNTRIES COULD SPREAD BEYOND CONTROL** (emphasis added). [para] Early in July, Thailand's decision to abandon the longtime link between its currency and the dollar set in motion a domino effect that brought down the currencies in Indonesia, Malaysia, the Philippines and eventually South Korea. That cycle can accelerate because each devaluation makes a country's exports less expensive overseas, forcing other nations to devalue to stay competitive. *** [para] ...many investors are still fleeing the major Southeast Asia currencies. Now, the Thai baht and the Indonesian rupiah have fallen lower than before the IMF intervened. [para] The IMF's five-month-old economic plan for Thailand assumed that the baht would stabilize to a rate of about 32 to the dollar. **IT NOW TRADES AT 52 TO THE DOLLAR**” (emphasis added). David E. Sanger, “With the Focus on South Korea, Thai and Indonesian Aid Falter: Currencies Fall, and Strict Reforms Art Put Off”, NYT, Jan 7, 1998: A-1, C-2.

And to bring us up to date: “The Indonesia, Malaysian, Thai and Philippine currencies plunged to record lows again yesterday, **AS THEY HAVE EACH TRADING DAY OF THE NEW YEAR**” (emphasis added). The reports gives the new values: Indonesia rupiah--7,700 to the dollar (the lowest level since it began trading in 1971); Malaysian ringgit--4.3657 to the dollar (the lowest since it was floated in 1973); Thai baht--54.35 to the dollar; and the Philippine peso--44 to the dollar (the lowest ever). Bloomberg News, “4 Asian Currencies Plunge to Record Lows,” NYT, Jan 6, 1998: C-2.

Date: Thu, 8 Jan 1998 03:19:56 -1000
From: “S. Lerner” <lerner@watserv1.uwaterloo.ca>

THE JUDAS ECONOMY

* A new book by a senior staff member of Business Week is grabbing attention in the executive bookshelves, if only because its writer is accusing western business leaders of selling out its own working class. William Wolman is the chief economist at Business Week and is the co-writer of “The Judas Economy: Triumph of Capital and the Betrayal of Work”.

The book argues that there is no historical evidence that sacrificing growth for lower inflation is worth the price we pay in stunted growth, lost jobs and stagnated pay. Even if there was such evidence, it says that the policies still amount to a deliberate sacrifice of the interests of people who earn their living from work, in favour of the interests of investors.

Wolman says that, since the collapse of communism, business leaders in the west have unhooked their traditional partnership with workers. And he points out that as capital relentlessly chases the lowest costs, “knowledge work” is becoming no more sacrosanct than the industrial work it replaced.

His example: Bangalore in India, which is fast becoming a powerhouse of international computer software development. Because of its enormous cost advantages, Bangalore is capturing thousands of jobs a year that would otherwise belong to “knowledge workers” in the developed world. Wolman: “Western capital is no longer wed to the idea that western labour -- even well-educated labour -- has to be a partner in the brave new world of twenty-first century capitalism...”

“The Judas Economy: Triumph of Capital and the Betrayal of Work” by William Wolman and Anne Colamosca (pub Addison Wesley)

One World, Ready Or Not by William Greider, 1997

35HR WORK WEEK -- Less work, More jobs ?

* With French youth rioting over the New Year, and their unemployed and homeless occupying unemployment offices across the country, attention is focussing on PM Jospin's historic decision to introduce the 35-hr week (without a loss of pay) as one of his major strategies to combat unemployment. His plan to cut working hours is to become legally obligatory in all workplaces of more than 10 employees on 1st January 2000.

* But Jospin faces a huge backlash from French employers who are unhappy at the costs they will be paying for the reduced working hours. Ernest-Antoine Seilliere, of the French employers' organisation CNPF says that employers should boycott any nationwide labour talks and labour protection organisations that threatened “one cent more in costs.”

Seilliere describes the financial incentives planned by French Employment Minister Martine Aubry to encourage employers to shorten working hours and take on more workers as a plan to “partly nationalise businesses”. He has advised employers to “harass the administrative and political decision-makers, who have all the means to do what they like, to make them aware of the diversity of companies and the enormous problems posed by the 35-hour plan...”

* Paul Krugman, American economist and author of the 1994 US bestseller, *Peddling Prosperity*, has criticised the French 35-hr week plan as based on propositions that still need much more debate. Writing on the electoral success of Lionel Jospin's socialists in the French election, Krugman observes: "Sooner than anyone might have expected, a radical economic doctrine has emerged from obscurity to become, in principle at least, the official ideology of a major advanced nation's government..."

Krugman has dubbed this new socialist economic path the "doctrine of global glut". He says it is based on three "fallacious but widely believed propositions": 1. That global productive capacity is growing at an exceptional, perhaps unprecedented rate; 2. That demand in advanced countries cannot keep up with the growth in potential supply; and 3. That the growth of newly emerging economies will contribute much more to global supply than to global demand.

Krugman believes that such doctrines, in economics and elsewhere, often fail to get adequately discussed in their early stages. He calls for more discussion on the "global glut" before it becomes "a dogma impervious to logic and evidence..."

Krugman: "In the formative stages of a doctrine, both the intellectual and the political establishment tend to regard them as unworthy of notice. Meanwhile, the doctrines can seem compelling to large numbers of people, some of whom have considerable political clout, financial resources or both. By the time it becomes apparent that such influential ideas -- say, supply-side economics -- demand serious attention after all, reasoned argument has become very difficult. People have become invested emotionally, politically, and financially in the doctrine, careers and even institutions have been built on it, and its proponents can no longer allow themselves to contemplate the possibility that they have taken a wrong turn..."

* Our Media Watch reports success stories of the 35-hr work week already starting to circulate on internet newsgroups. One practical experience with the six-hour working day gaining attention is from Finland.

Tony Carlyle of the *Global Times* reports that in the boom days of 1988 in Lojo, Finland, the plastics manufacturing company Orthex found that it could not keep its workforce. It was paying 30 marks per hour but just down the road at the paper mill workers could get 100 marks an hour. So the company decided to make itself more attractive by cutting working hours from eight to six and still pay the workers for eight.

Orthex was promptly expelled from the employers' federation and the unions became very suspicious. Now the company is besieged by study groups and both unions and employers say they are pleased with the results.

* The gamble the company took was that people would rather have more free time than more money. There was a catch, however. Employees would have to do without extra holidays as set out in their collective agreement. This meant the company could save money because to replace those away on holiday it would have to pay others overtime to keep up production.

One unexpected saving was that time lost due to illness almost disappeared. Tony Carlyle reports that people felt better and their health improved. The same phenomenon was also apparent at the large Finnish tyre producer Nokia, who brought in a six-hour working day. Their staff suddenly stopped taking days off for illness altogether.

* In Canada, a union survey of shorter working hours has found workers generally interested in negotiating shorter hours of work, and that they would consider some kind of financial sacrifice -- as long as full-time jobs were created as a result. The survey found that concern about finances and anxieties about change are common responses to shorter work time proposals. But when unions on behalf of members initiate the move to shorter hours, the time away from work is extremely popular among workers.

* In Sarnia, Ontario, a union negotiated one extra day off every three weeks. Six other union plants, plus some non-union plants and public sector workers followed suit. In a town of 100,000 people, these Happy Fridays are now a community event with family picnics, fishing derbies, golf tournaments and other activities scheduled for these days.

(Andre Gorz, a French economist, has been writing about shortening work hours for decades. He sees a constant stream of labor-saving technologies emerging that have served to increase profits and unemployment at the expense of the workers who are required to use them. Shortening work hours is an effective way to spread the benefits of new technologies around.)

edited by Vivian Hutchinson for the Jobs Research Trust
P.O.Box 428, New Plymouth, New Zealand
phone 06-753-4434 fax 06-759-4648
Internet address -- jobs.research@jobsletter.org.nz

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End of work?

The future of work also is hotly discussed in Europe (especially France), Australia, New Zealand--even Canada to some extent-- but not in the US, in spite of what Rifkin, Snyder et al have to say here.

In an article in the Utne Reader, May-June 1995, adapted from his book, The End of Work: the Decline of the Global Labor Force and the Dawn of the Post-Market Era, Jeremy Rifkin writes:

“From the beginning, civilization--as well as people's daily lives--has been structured in large part around the concept of work. But now, for the first time in history, human labor is being systematically eliminated from the economic process. In the coming century, employment, as we have come to know it, is likely to be phased out in most of the industrial nations of the world. A new generation of sophisticated information and communication technologies is being introduced into a wide variety of work situations. These machines, together with new forms of business reorganization and management, are forcing millions of blue- and white-collar workers into temporary jobs and unemployment lines--or worse, breadlines.”
<http://orion.oac.uci.edu:80/~spk/rifkin.html> <Jeremy Rifkin article on End of Work in Mother Jones>

This is not a new idea at all. Many futurists have been calling for such a “world without work” for many years. It was the basis of a movement called “Technocracy” in the early 20th Centuries, when there was scarcely any technological capability for such a world. But the technology does exist now, and will get even more powerful in the near future.

In 1964, during the earliest days of futures studies, there was in New York City a “Conference on the Cybercultural Revolution--Cybernetics and Automation,” which issued a “Manifesto of the Ad Hoc Committee on the Triple Revolution”. The three parts were the Cybernation Revolution, the Weaponry Revolution and the Human Rights Revolution.

The Manifesto was correct on all three counts--cybernation and automation has rendered work largely unnecessary; nuclear weapons has made war unwinnable and untenable as an instrument of national policy; and the human rights revolution has ended the legitimacy and morality of racial, gender, and all other kinds of prejudice.

While war and prejudice still exist, the basic point of the Manifesto was absolutely on the mark for those two obsolete practices. It was correct about “cyberculture” and the end of work as well. However, the forces which enjoy excessive power and privilege now because of the unnecessary, unethical, and growing global maldistribution of wealth, actively and successfully prevented the social change which the Manifesto saw as possible and desirable. Indeed, during the 1980s, through their control of education, advertising, and the media, the wealthy were able to make greed and excess fashionable, popular, and seemingly inevitable and right, so that you probably believe that work is necessary, and that the rich and poor both deserve what they have.

(A good discussion of the Manifesto is found in Henry Winthrop, Ventures in Social Interpretation. New York: Appleton-Century-Croft, 1968, Chapter 3, “The Sociological and Ideological Assumptions Underlying Cybernation.”)

A recent article by David Peace Snyder, “The Revolution in the Workplace: What's Happening to our Jobs?” The Futurist, March-April 1996, says, “While it may be of little comfort to the growing millions of displaced, underpaid workers of the industrial world, a number of futurists anticipated this historic moment 25 to 30 years ago, and the accurately described the social and economic consequences of the Information Revolution in considerable detail.” (p 10).

SZF quotes from a book by Thomas Stewart, Intellectual Capital: “What kind of a society would we have if just 2 percent of the population could produce all the goods needed by society--the cars, the hi-fis, the television sets?” We may soon find out, ready or not! (See the section on nanotechnology)

Judicial recognition of the rights of future generations

In our consultations with common law courts in Singapore, the Philippines, and the Federated States of Micronesia, we have come to realize how much they and other common law courts rely not only on English, but also on American, case law. Is it possible that some day US courts will do the same? For example, when will a US court adopt the position of the majority in Oposa vs. Factoran, Jr., excerpted here, in which the Philippine Supreme Court ruled that future generations have standing and thus can bring legal action to prevent environmental destruction?

“This case, however, has a special and novel element. Petitioner minors assert that they represent their generation as well as generations yet unborn. We find no difficulty in ruling that they can, for themselves, for others of their generation and for the succeeding generations, file a class suit. Their personality to sue on behalf of the succeeding generations can only be based on the concept of intergenerational responsibility insofar as the right to a balanced and healthy ecology is concerned. Such a right, as hereinafter expounded, considers the 'rhythm and harmony of nature.' Nature means the created world in its entirety. Such rhythm and harmony indispensably include, *inter alia*, the judicious disposition, utilization, management, renewal and conservation of the country's forest, mineral, land, waters, fisheries, wildlife, off-shore areas and other natural resources to the end that their exploration, development and utilization be equitably accessible to the present as well as future generations. Needless to say, every generation has a responsibility to the next to preserve that rhythm and harmony for the full enjoyment of a balanced and healthful ecology. Put a little differently, the minors' assertion of their right to a sound environment constitutes, at the same time, the performance of their obligation to ensure the protection of that right for the generations to come.

“The *locus standi* of the petitioners having thus been addressed, We shall now proceed to the merits of the petition.

“After a careful perusal of the complaint in question and a meticulous consideration and evaluation of the issues raised and arguments adduced by the parties, We do not hesitate to find for the petitioners and rule against the respondent Judge's challenged order for having been issued with grave abuse of discretion amounting to lack of jurisdiction.” Supreme Court (of the Philippines) Reports Annotated. Vol. 224, July 30, 1993, p. 802f.

It must of course be added that the decision of the Philippines Supreme Court was made much easier by the fact that, unlike the US Constitution, “Section 16, Article II of the 1987 Constitution explicitly provides: 'SEC. 16. The State shall protect and advance the right of the people to a balanced and healthful ecology in accord with the rhythm and harmony of nature.' (para) This right unites with the right to health which is provided for in the preceding section of the same article: 'SEC 15. The State shall protect and promote the right to health of the people and instill health consciousness among them.’” (Ibid., p. 804).

Still, there must be some way to find such rights under the American Constitution and common law. Someday, some judge will.

The rights of future generations got another huge boost recently when Unesco passed a declaration on the responsibilities of present generations towards future generations:

UNESCO ADOPTS DECLARATION ON THE RESPONSIBILITIES OF PRESENT GENERATIONS TOWARDS FUTURE GENERATIONS.

Paris, November 12, 1997

UNESCO today adopted a “Declaration on the Responsibilities of Present Generations Towards Future Generations.” Made at the threshold of the 21st century, the Declaration underlines that present generations should bear in mind the needs and interests of future generations and the special role that UNESCO must play to sensitise public opinion on this subject.

The aim of the text is clear - to ensure right from today a viable future for the coming generations. Its preamble recalls certain fundamental principles: “the necessity for establishing new, equitable and global links of partnership and intra-generational solidarity [...] the avowal that the fate of future generations depends to a great extent on decisions and actions taken today and that present-day problems, including poverty, technological and material underdevelopment, unemployment and exclusion, discrimination and threats to the environment, must be solved in the interests of both present and future generations.”

The 12 articles of the Declaration elaborate proposals on what can be done to safeguard the needs and interests of future generations in the fields of education, science, culture and communication. Concerning the environment, for example, Article 4 states that “the present generations have the responsibility to bequeath to future generations an Earth which will not one day be irreversibly damaged by human activity. Each generation inheriting the Earth temporarily shall take care to use natural resources reasonably and ensure that life is not prejudiced by harmful modifications of the ecosystems and that scientific and technological progress in all fields does not harm life on Earth.” The idea is reinforced in Article 5 which stipulates that the present generations “should ensure that future generations are not exposed to pollution which may endanger their health or their existence itself.”

Emphasising the importance of the cultural factor, the Declaration considers it to be the responsibility of the present generations to “identify, protect and safeguard the tangible and intangible cultural heritage and to transmit this common heritage to future generations.” (Article 7). This is also the thrust of the articles concerning development and biodiversity. There is, on the one hand, the question of ensuring “the conditions of equitable, sustainable and universal socio-economic development” (Article 10) and, on the other, of protecting the “human genome, in full respect of the dignity of the human person” (Article 6).

The search for peace, the respect for diversity and human rights which are the central pillars of UNESCO’s work, figure prominently in the Declaration. Both present and future generations should be able to choose freely “their political, economic and social systems [...] and to preserve

their cultural and religious diversity” (Article 2); they should also learn “to live together in peace, security, respect for international law, human rights and fundamental freedoms” (Article 9) and to fight all forms of discrimination (Article 11).

UNESCO has called upon all States, intergovernmental and non-governmental organisations as well as individuals to help disseminate the Declaration and its implementation. For its part, UNESCO will undertake to spread the text and the ideals it enshrines as widely as possible.

The Declaration is the fruit of a co-operative effort undertaken since 1994 by Commandant Cousteau’s team and UNESCO. A fourth draft of the Declaration was drawn up by researchers in July 1996 and it was finalised by government experts who met in September this year at UNESCO Headquarters and by the Executive Board.

The question of safeguarding the interests of future generations is not new. In 1979, Jacques-Yves Cousteau initiated the idea of a declaration on future generations. The world campaign he launched has, to date, gathered 5.5 million signatures. UNESCO’s stand on this subject goes back to its first Medium-Term Plan (1977-1982) which mentioned that the recognition of the unity of mankind presupposed “a deliberate choice of fashioning a common destiny with joint responsibility for the future of mankind.” The third Medium-Term Plan (1990-1995) stressed the need for ensuring “the sustainability of resources for future generations.” UNESCO is also co-operating closely with the Foundation of International Studies (Malta) which has created a world network devoted to our responsibilities towards future generations and towards their environment.

Cycles and Cohorts: Good News in the early 21st Century?

Recent discussions of the future relying on cyclical as well as age-cohort analysis seem to suggest that, while the next decade will be one of more or less continual decline and confusion, the early decades of the 21st Century might see the beginning of a prolonged period of optimism, innovation, and discovery.

Cycles

Probably the most famous and respected theory of social change based on cycles is that of the Russian Nikolai Kondratieff (his name is also sometimes spelled as Kondratief, or Kondratiev). His is a theory of Long Waves found in society, a cycle of rise-> prosperity-> decline-> depression-> recovery-> and rise again.

His argument is basically related to the life-cycle of technologies, especially to historical fundamental shifts in sources energy beginning with water power, then the steam engine, coal, and now oil. The Kondratieff Long Waves are approximately 50-60 years long.

The First Long Wave began around 1789 and peaked in 1814. The second began in 1843 and peaked in 1864. The Third Long Wave began in 1897 and peaked in 1920, while the present

Long Wave began in 1932, peaked in 1974, and will reach its end around 2002, when a new, 5th Wave, based on some other kind of energy source yet uncertain, will begin.

Kondratieff's Long Waves have been used in one way or another by such famous economists as Joseph Schumpeter, Simon Kuznets, Walter Rostow, and by contemporary system scientists such as Immanuel Wallerstein and Brian Berry.

Another example of a cyclical theory comes from the Swiss economist Theodore Modis. (Predictions, 1992). Modis shows that everything, especially technologies, but also societies, move through a series of overlapping “envelop” curves of approximately 56 year intervals. According to Modis, the next major period of innovation in the world will be in the first quarter of the 21st Century.

Modis' theory was recently picked up by Bruce Cordell in a study of the past and future of US space exploration activities called, “Forecasting the Next Major Thrust into Space.” Space Policy, Vol. 12, No. 1, February 1996, pp. 45-57.

Cordell uses Modis' theory to trace the history of periods of expansion (and quiet) in American history. He believes that Modis' theory fits the historical record in the US very well. He thus concludes that “[t]his result allows us to forecast that the decade from 2015 to 2025 will be the analog of the 1960s; i.e., it will involve major activities in technology, engineering, and human exploration. There is every reason to believe that the focus will be on large-scale human operations in space and that they will be spectacular.” (56)

However, Cordell warns, “Twenty-first century space planners should be reminded that the Modis Cycle falls as rapidly as it ascends, and that Modis peaks tend to be times of major wars. Thus if independence from Earth is not achieved by space settlers of the 2020s, large-scale human operations in space may be curtailed until the next Modis peak arrives in 2081!” “And without the proper use of space technologies and resources, it's likely humanity will have been engulfed or significantly altered by environmental, cosmic, or even computer-related events” by 2081, Cordell believes. “Even so, societal events are not predetermined by these ubiquitous waves as long as we actively include them in our planning.” (57)

Cordell's final point is important: regardless of what the “cycles say,” it is up to human agency to make things happen, or not happen. But there are other reasons why cyclical theories must be used with caution. Most cyclical theories seem highly contrived and mechanical. They result from a great deal of “smoothing” of the data (that is, throwing out facts that don't fit your preconceptions!). Moreover, they are based on rather limited historical data. It is not clear that they would help us predict the distant “past” for example. And if there is a large part of novelty in the future, even past “predictions” might be misleading, or useless.

Nonetheless, isn't it interesting that all of the theories of cycles mentioned above indicate that we are at the low, tailend of some major cycle, and that there will be a major period of dynamic (if dangerous) growth, innovation, and excitement in the early decades of the 21st Century?

What if that is true? It suggests that we should not be too discouraged that no one seems to have fresh ideas now, and that we seem to be at our wit's end, and in great danger. We are. But there is hope that, when the wheel turns, and the next cycle begins, we will suddenly find ourselves awash in bright but threatening new ideas, new technologies, and a new cycle of dynamic growth, unlike our past, will begin.

Age-Cohort Analysis

Age-Cohort Analysis is another method futurists use to try to anticipate the future. It is based on the fact that different “age cohorts” (also sometimes called “generations”)--people born and growing up during the same time span, and in the same place--often share ideas and beliefs about the world which are very different from the ideas and beliefs held in common by members of age cohorts only a few years older or younger than they are.

Thus, when an age cohort with one worldview retires and leaves political and economic power, and a new age cohort with a very different worldview comes in, the world may change because, holding different beliefs, the actions and policies of the newer cohort differs from those of the older cohorts.

Some scientists are becoming increasingly certain that the brief period of time from conception to age three or so may be the most important in determining the future of a human adult. The chemicals in the mother's bloodstream that pass through the blood of the fetus she is carrying strongly influence many physical, behavioral, and intellectual characteristics of that fetus after it is born, and throughout the rest of its life. Harmful substances may affect the development of the brain of the fetus, for example, thus severely limiting the ability of the child to develop intellectually later in life. Other substances which the fetus receives from the mother, on the other hand, assure the probability of normality, or perhaps even exceptional abilities later on in life.

After a child is born, how that infant is reared--the amount of handling, loving, caring, diverse but safe stimulation, physical abuse, wholesome or unwholesome food, and all the rest--greatly influence how the child will thrive or struggle later as a youth and as an adult.

Many of the things a child experiences are unique to that child. But many other things are common to children born at the same time and place.

Children born in a war zone experience many deprivations and horrors in common. The trauma of these “galvanizing experiences,” as they might be called, accompany them throughout the rest of their lives, defining them as an “age cohort.” On the other hand, children just a few years older or younger who grew up in safe, secure, peaceful communities view the world quite differently, and react to threats or dangers differently. They are a different age cohort.

Children born into and growing up in times of famine, poverty, forced mobility, loss of parents or other loved ones may never recover from those early galvanizing experiences.

On the other hand, the cohort of spoiled, largely male only-children, born to doting parents in present-day China will certainly view the world differently from children born to large families in those many parts of the world where large families still predominate.

In the US, the cohort which grew up during the Great Depression of the 1930s, and then became deeply involved in the Second World War, still carries with them the memory of profound scarcity and deprivation, the horror of war, and then the sweet triumph of complete victory and global dominance--tempered by the death of so many friends and loved ones. They have a "can do" attitude towards almost anything, having been tested, tempered, and triumphant.

But other cohorts, born only a few years later, have never experienced significant economic deprivation or war of any kind. They only know, and expect as a natural right, peace and prosperity without their having to struggle for it.

Childrearing fashions change too. One of the largest cohorts ever born in the US--the so-called "Baby Boomers" born between the late 40s and 1960--were all basically reared by parents who followed the advice of Dr. Benjamin Spock in his book, Baby and Child Care. The parents of the Baby Boomers were the first to live in suburban isolation usually without experienced grandparents around to guide them. Dr. Spock's book filled a great void, telling them to just let their children "do their own thing," freely, and without restraint. Trust your children's basic instincts.

Yet children born before them in the 1930s-40s were reared in a completely different way--according to "the clock". They were expected to eat at specific times (not sooner or later), to move their bowels on command (and not before or after the command), to take naps and go to bed on an exact moment on the clock, and in general to be disciplined to strict, mechanical, external forces--not to their own whims and internal rhythms.

This "Silent" generation was also very small in number--one of the smallest in American history. Few babies were born, since children were a great burden during the Depression. So they became a tiny, ignored, and heavily-disciplined sliver of humanity sandwiched in between the older, more numerous cohorts who went off to fight and win World War Two, and the Baby Boom children of the War Heroes

Ironically enough, being small in number, and highly disciplined, the Silent Generation turned out to be doubly blessed: older competitors were often killed in the war, and those who did survive produced many children for whom the Silent Generation could then become teachers, employers, manufacturers, and leaders. Members of the Silent Generation never had to worry about jobs. With the older cohorts weakened by war and a huge number of young people to provide for, there were always jobs for them.

But they then proceeded to block entry into all kinds of jobs for the younger Baby Boomers, who then, with their vast numbers, blocked jobs still more for the much smaller numbers in "Generation X" which followed them.

This kind of thinking--seeing how pre-natal, early natal, and childhood experiences influence the thought and behavior of an entire generation of adults--is called "Age Cohort Analysis."

It is one of several ways futurists try to anticipate changes and continuities in the future.

The World War Two generation is rapidly dying off. Soon there will be no one alive who can literally "Remember Pearl Harbor."

A major "galvanizing experience" of the Silent Generation, as well as the Baby Boomers, was the Cold War between the United States and the Union of Soviet Socialist Republics. The Cold War was the major event shaping, and warping, the lives and lifestyles of all Americans during the 1950s, 60s, 70s, and 80s.

And then suddenly it ended and can never return in its old form. A new generation of Americans has already been born for whom the Cold War will be merely a curiosity they read about in text books. It will have no meaning for their lives.

They live in a world totally different from that of the old Cold Warriors. When the Cold Warriors finally retire, and die off, and Generation X and Generation Next take over, they will not see the world through the same lens the Cold Warriors used to see everything. They will literally "live" in a different world.

We can get a taste of what might be coming. Bill Clinton, Al Gore, and even Newt Gingrich are the first national leaders in many, many years who are not war veterans. Indeed, they were never in military service. That entire life-shaping experience of military life which has conditioned, for better or worse, almost all males and many females (and certainly all major political leaders) for 50 years has come to an end--at least for a while

Bob Dole was the last American to run for the US Presidency by trying to live off of World War Two memories. It just did not work for Dole--there are not enough Americans around who care deeply about the personal sacrifices he made. And so a person who was arguably a war resister--a draft dodger--and a perfect model of Baby Boom yuppiedom--Bill Clinton--won.

The next campaign will be entirely waged between Baby Boomers for whom peace and prosperity is normal and expected, and depression and war at best an unpleasant memory.

And what's next?

What are the next age cohorts (those in grade school; those just being born) going to be like? How are they being raised? What will be their common "galvanizing experiences"--or will they even have any, living such placid, pampered lives?

When one cohort leaves power and a new one comes in, the world changes.

Waves and Cohorts combined

Recently some of the aspects of Cyclical Theory and Age Cohort Analysis have been joined together. One of the most popular and provocative mergers is in a pair of books written by William Strauss and Neil Howe. The first, published in 1995, is titled Generations: The History of America's Future, 1584-2069. The second, published in 1997, is titled The Fourth Turning.

Both books purport to show that there are in the US major social eras which can be identified and defined, historically and futuristically. In addition, within each era there is a virtually inevitable progression of four age cohorts which they label generically (with specific names for each specific era in which they appear) as “Idealists” (who begin each era), “Reactives,” “Civics” and “Adaptives.” In the Fourth Turning, they modify the names of those four cohorts as “Prophets”, “Nomads”, “Heroes”, and “Artists”, respectively.

Strauss and Howe identify five periods from the beginning of the settlement of the US (they developed their theory only in regard to the US): The Colonial era, the Revolutionary era, the Civil War period, the World War period, and the present (sometimes labeled “Millennial” or “The Fourth Turning”).

Here is the way Strauss and Howe characterize the era, and cohorts, of the present:

There are two cohorts (they use the term, “generations”) still remaining from the World War Period: the “G. I.s” (“Civics” born between 1901 and 1924, who will die out around 2004) and the “Silents” (“Adaptives” born between 1925 and 1942, who will disappear about 2022).

There are also three cohorts born so far in the present (Millennial) era: the “Boomers,” (who are “Idealists” born between 1943-1960, who will live until 2040); “Generation X”--also called the 13th Generation because they are the 13th Generation from the first in the Colonial era (who are “Reactives” born between 1960 and 1981, dying out in 2061); Millennials (who are “Civics” born between 1982 and 2003); and, according to one forecast, the “Cybers” (who are “Adaptives” who will be born from 2004-2025, and will live into the 22nd Century, vanishing around 2115).

Fitting this to what we concluded about the upswing expected in the early 21st Century in Kondratieff and other curves, that means the period of rising possibilities in the first decades of the 21st Century will coincide with the period when the “Millennials” (who are “Civics” born between 1982 and 2003) will be in control. The “Millennials”, according to this analysis, thus are to the future what the “G. I.s” were to the immediate past: “Can Do” confident in a “can do” period.

All in all, that sounds like we might be in for some pretty exciting times in a couple of decades. If we make it that far, and if this analysis is correct.

Critics of wave theories point out that they are far too mechanical on the one hand and yet very vague and imprecise on the other. For example, the current Kondratieff wave is substantially longer than the earlier ones, which themselves were of varying length. So the timing of the upswing for the next wave, if any, is very uncertain. Critics of generational theories admit that certain major events like wars have important age-related effects on people, but point out that it

is problematic, to say the least, to assert that all people born at the same time share the same experiences, much less react to them in the same way. There also is usually no clear line of demarcation between one generation and the next. We advise skepticism toward any attempts to predict the future.

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<http://www.gbn.org/BookClub/Generations.html> >GBN Book Club Reviews - (September 1991)
- GENERATION

Science and Technology

The magazine, [Science](#), in its issue of 19 December 1997, Lists the ten top breakthroughs of 1997:

Number one is “The lamb that roared.” The cloning of a lamb from a single cell of an adult sheep spawned a loud and late outcry from those opposed to genetic engineering. The image of the sheep serves as a fitting warning to possible bad uses of the upcoming genetic technologies, but the revolution is already so advanced (the genie is “out of the bottle”) that we are going to have to make the best of it.

The first runner-up was “Pathfinders' Triumphant Mars Landing.” Was it really a big deal, or is the public just looking for a good space story since little has occurred lately in this area?

The discovery of oceans on Europa, a moon of Jupiter (and hence a possible source of life) was another of the ten. See above, although this one may have more potential as Europa may have life, which may generate new uproars among the religious folks who burned the first heliocentric proponents at the stake.

Nanotechnology made significant strides forward in the discovery of a way to produce, and perhaps mass produce, single-walled nanotubes. This materials advance is just the tip of the nanotech iceberg. (See the nanotechnology section)

Discovery of the role of neurons in the central nervous system provided “clues that may one day lead to new treatments for ailments ranging from Parkinson's disease to spinal cord injuries.” (See the section on neuroscience)

There were so many discoveries in genetics that they could only title that “Genes galore.”

This issue also listed “**new research horizons**”, among which were:

Forecasting future shocks (long-range weather prediction)

Personalized prescriptions (realization of “a decades-old vision of tailoring drugs to a patient's genetic makeup”)

Diversity debate (“As humans continue to wipe out species, expect more research on the science of why biodiversity matters”). This is a “death of nature/governing evolution” issue too, and will be of increasing political and judicial matter.

Designer crops (Europe is catching up with the US in the use of transgenic crops. But there is great popular resistance in Europe--even more than the US.)

Future Trends-- Nanotechnology

"Molecular nanotechnology: Thorough, inexpensive control of the structure of matter based on molecule-by-molecule control of products and byproducts; the products and processes of molecular manufacturing."

Futurists are abuzz with talk about nanotechnology. For many years it has been considered a "wild card" in future scenarios, meaning that it is a high impact, low probability event in the future. Lately, this wild card has been turning in to an inevitability, as science and technology approach it from several different angles. Chemists have been creating molecules by mixing them in solutions; engineers have taken microminiaturization down almost to the molecular level; computers have expanded to model molecules and molecular structures; and microbiologists have gained an understanding of how molecular machines work in life forms.

Eric Drexler, one of the first writers to bring nanotechnology to the popular press, describes the difference between the present and the future compellingly:

"Technology-as-we-know-it is a product of industry, of manufacturing and chemical engineering. Industry-as-we-know-it takes things from nature-- ore from mountains, trees from forests-- and coerces them into forms that someone considers useful. Trees become lumber, then houses. Mountains become rubble, then molten iron, then steel, then cars. Sand becomes a purified gas, then silicon, then chips. And so it goes. Each process is crude, based on cutting, stirring, baking, spraying, etching, grinding, and the like.

Trees, though, are not crude: To make wood and leaves, they neither cut, grind, stir, bake, spray, etch, nor grind. Instead, they gather solar energy using molecular electronic devices, the photosynthetic reaction centers of chloroplasts. They use that energy to drive *molecular machines*-- active devices with moving parts of precise, molecular structure-- which process carbon dioxide and water into oxygen and molecular building blocks. They use other molecular machines to join these molecular building blocks to form roots, trunks, branches, twigs, solar collectors, and more molecular machinery. Every tree makes leaves, and each leaf is more sophisticated than a space-craft, more finely patterned than the latest chip from Silicon Valley. They do all this without noise, heat, toxic fumes, or human labor, and they consume pollutants as they go. Viewed this way, trees are high technology. Chips and rockets aren't."

It is this type of sophistication that nanotechnology will embody. Life provides the working theory, computer models represent molecular structures to build, and the only thing left to bring this technology into being is a matter of engineering. Basically, all we have left to do is create "hands" that are small enough to grab on to particular molecules and place them with accuracy. Experts in this field are estimating that this will occur in 10 to 20 years. Nanotechnology will replace industrial technology, but not just as a more efficient version of its predecessor.

"Assume a particular state of development in the productive faculties of man and you will get a particular form of commerce and consumption. Assume particular stages of development in production, commerce and consumption and you will have a

corresponding social constitution, a corresponding organization of the family, of orders or of classes, in a word, a corresponding civil society." -- Karl Marx

Kind of like Marshal McLuhan, isn't he?

DNA is a miraculous thing. It contains a set of incredibly complex instructions of how to create an entire living creature, and it directs the construction molecule by molecule. Nanotechnology is not biotechnology because it will not rely on altering life, but the idea of building molecular machines to construct goods comes from life.

When we first put molecules together in a complex fashion, it will be a painstaking process. But one of the first sophisticated things we will create is a molecular assembler; something that is more adept than we are at selecting particular molecules and putting them in particular places. We will need to create an army of them in order to set up a molecular manufacturing system. In order to achieve this rapidly, the first breakthrough molecular assembler to create is one that can make a copy of itself. Then we can run copies upon copies of them, until we have created the basis for this molecular assembly system. From here on up the expansion of capabilities will grow geometrically, as we create molecular scale computers that can guide the coordinated efforts of millions of molecular assemblers.

At a more developed stage, we will create something like a "nanotank" that hooks up to a desktop computer, and has a series of small tanks full of different molecules. In a larger tank, there will be trillions of molecular assemblers, copying themselves when others fail. The design specifications of the product you want will be contained as a computer program for the assemblers to carry out. Virtually anything can be created this way, as everything that we know of is made out of molecules. (See the above section on the information economy)

A popular add-on device will be a molecular disassembler, a tank where you can put your garbage in to be disassembled, molecule by molecule, and sorted into different storage tanks. As long as your garbage is not spewing off subatomic particles (i.e. if it is not radioactive), then it will be recyclable. This recyclability of nearly everything will greatly reduce our resource burden on the mines, forests, and oceans of the world.

The environment has much to gain from this new method of production. In addition to its recyclability, it will be easy to avoid pollution. By controlling where each molecule goes in the construction of something, no pollution is created. Thus, from a nanotechnological perspective, pollution is just inadequate control of matter. Modernist notions of Progress have been in disrepute of late, in large part because of the devastation we have caused the environment. But if nanotechnology comes to pass, neither pollution nor scarcity of resources will be a problem for very long. In fact, it will greatly facilitate the reconstruction of our environment. One example: using molecular disassemblers in toxic waste dumps and landfills to clean them up by breaking them down into molecules that are useful in the construction of new objects.

The route towards such nanotechnological capabilities is already loaded with commercial applications. This is an important point, because we are headed toward nanotechnology independently of anyone having any vision of creating it, and independently of any farsighted research and development dollars. Here are some examples, from the present to the near future.

The first company that manages to use atoms as bumps signifying zeros and ones that can be read by a contemporary microscope will have the ability to place a million times the digital code on a CD that currently fits there, and this is only a couple of years away. The first company that can push atoms into basic formations will be able to make diamond, graphite, and even stronger substances from simple carbon (which is overabundant in the air, in carbon dioxide, causing the greenhouse effect). And the first company that makes a molecular assembler that can copy itself will reap the benefits that knowledge products bring-- the first product is astoundingly expensive, but the copies are nearly free and unlimited in number.

The nanotank that can be programmed to create objects of any kind and its add-ons will be extremely expensive-- at least the first few will be. After that, they can be used to make copies of themselves, and the price will fall geometrically, much faster than computer prices are falling today. Such a rapidly expanding technology has the potential for amazing changes, for good or for bad, because all constructive power is potentially destructive power. Even from this brief overview, it should be clear that we are facing a very different set of productive technologies. It is imperative that we realize that we are going to be in a different technological landscape which will contain new challenges and opportunities than exists today.

Some of the dangers we will face include accidents-- what could happen if a molecular assembler, (or even worse, a disassembler) gets loose and starts destroying things? Worse yet, the capacity of one terrorist to create massively destructive new weapons (or even old ones) will be greatly increased. The difficulty of safety control and weapons control of nanotechnology will pose immense problems for governments in the future.

Still, these dangers are at least matched by the new possibilities for an immense increase in worldwide wealth while simultaneously healing the environment. The creation of more advanced materials will greatly speed human expansion into space, and the creation of molecular scale objects suggests some amazing medical possibilities (see the section on medicine).

Understanding the importance of these changes, the Foresight Institute exists solely to educate policymakers and the public about nanotechnology so that we can discuss these issues and create safety regulations before the technology is upon us. After seeing the late reaction to the cloned sheep, their work seems crucial.

Eric Drexler, [Engines of Creation](#) and [Unbounding the Future](#)

See also further discussion of nanotechnology, with suggested websites, in the Appendix.

Crime Down, Fear Up

The results are in-- crime in America, in almost all categories, has been going down for the last few years now. The tripling of the prison population between 1979 and 1989, the increase in police, the war on drugs, and the "three strikes" laws have taken effect. Thus the US now imprisons more of its own population than any other country on Earth. Unfortunately, many people are still dissatisfied with these results. Perhaps the fact that reporting of crime has gone

up in the last decade or so, along with the substantial increase in fictional crime shows on television, has contributed to this increased fear of crime, despite statistical decreases in its actual occurrences. And as our population ages, fear of crime might very well increase. America continues to lead the world in many crime statistics (gun deaths being the most prominent), leaving the question as to what breeds crime in America still one of our most important unanswered social issues.

“Only 41 percent of the public is optimistic about the future of the country, according to a study by the Pew Research Center For The People & The Press. . .

“More than half of adults say we’re losing ground in Social Security and Medicare, drug use, morals and ethics, crime, job security, taxation, poverty, public education, health care, and good-paying jobs. The public rates the status of the country five years from now at 5.7 on a 10-point scale, the lowest score recorded in the 13 surveys conducted since 1959.

“Curiously, however, Americans rate their personal prospects at near-record highs. Respondents to the survey envision their life in five years as a 7.7, almost as high as the 7.9 rating recorded in 1964.

“A change in the outside world may partly explain this gap, according to the Pew Center. During the Cold War, the perceived primary threat to the nation was clearly seen and understood-- the Soviet Union. Yet as the Cold War subsided, America’s new national threats were closer to home and more difficult to address.”

Another possible explanation is that journalistic representations of reality on TV and elsewhere paint a worsening picture of the world, giving more and more space to gruesome crimes, terrible accidents, and deviant behaviors. This would lead to more people seeing their personal situation as much better than their perception of the world around them. Until the mass media are truly demassified, this trend will probably continue.

Source: “I’m Okay -- We’re Not”, American Demographics, Kevin Heubusch. May 1997

See also, Julian Roberts and Loretta Stalans, Public Opinion, Crime, and Criminal Justice. Westview Press, 1997

Small Arms, Big Problems

More than 500 million military style hand-held weapons exist now-- enough to arm every 12th human on earth-- and millions more are produced each year. Violence fed by the uncontrolled spread of these weapons is further destabilizing societies already ravaged by war, poverty, and environmental degradation, such as El Salvador, Russia, South Africa, and Angola. These small arms are the tools for as much as 90 percent of the killings in today's wars.

"In a global political arena in which the control of nuclear weapons, tanks, and poison gas have preoccupied policymakers, small arms have been the orphans of arms control." But in the US, where there are more firearm homicides in one day than in Japan in one year, there are more

licensed gun dealers than McDonald's outlets. While addressing the proliferation of small arms around the world is not a sufficient action in itself to bring peace and social stability to troubled societies, it is a necessary step in that direction.

(source: Worldwatch report Small Arms, Big Impact: The Next Challenge of Disarmament)

New Public Philosophy?

The triumph of the market system can be as destructive to civil society as any totalitarian government by forcing everything to be monetized, made scarce, and sold for a profit. While there seem to be no coherent paradigms that can challenge the hegemony of capitalism, recent writings indicate that more people are aware that the blind forces "the market" cannot solve all our social problems, and that some kind of renewed communitarian response (and a public philosophy supporting it) is necessary--and will come.

Kenneth Galbraith, Good Society. Houghton, Mifflin, 1996;

Amitai Etzioni, The New Golden Rule: Community and Morality in a Democratic Society. Basic Books, 1997,

Robert Theobald, Reworking Success: New Communities at the Millennium. New Society Publishers, 1997

The Future Generations Alliance of Kyoto Japan, is making the search for a "new public philosophy" on a global level its major focus over the next several years.

God is staging a comeback

As traditional religions continue to decline in membership, the death of God has been greatly exaggerated. Consider the following exemplars:

Many pop groups have announced their conversion and include God in their songs.

Stephen Hawking has joined Gary Zukav and Paul Davis as three worldclass physicists who say God is the "Unified Theory of Everything" that physicists are seeking.

"The Next Church Movement" is underway: full service churches, seven-day-a-week churches, pastoral churches, apostolic churches, new paradigm churches, shopping mall churches and other new configurations abound. They are also megachurches. Willow Creek Community Church in South Barrington, Illinois has 200 fulltime paid employees.. "This may be the most important civic structure that a whole generation is likely to know in an impersonal, transient nation." Source: Atlantic Monthly, Aug 1996. Charles Trueheart

Many businesses are bringing religion to work too. "Jesus-CEO" is on the NYT bestseller list. Now many others are touting spiritual leadership. (SZF 1/97)

What impact might this have on the constitutional doctrine of the "Separation of Church and State" if almost everything can declare itself to be a "church" and everyone a "minister"? How can we keep church and state separated when the line between church and nonchurch is so blurred? These boundaries may never again be as clear as they once seemed to be.

Virtual University, Corporate Universities

The publicly-funded, four-year, campus-based brick-and-mortar university in America was the product of specific era, fast receding. Today, through changes in information technology, the economy, the labor force, and government funding, new entities are making an end run around the traditional university to reach new learners in new ways. These fall under two major categories.

Virtual universities provide distance education, using modern information technologies such as the Internet, which allows people of all ages and conditions to learn whatever they want to learn, whenever they want to learn it, from whatever source anywhere in the world that is willing to help them learn it. The cost savings in buildings, transportation, and instructional personnel make Virtual Universities highly competitive with traditional ones, and the flexibility they allow is highly desired for "just in time" learning.

Corporate universities are growing immensely as the speed of economic change means that virtually everybody goes to work with obsolete skills. On-the-job training is becoming institutionalized into corporate universities, which are structurally incented to stay up to date. Currently, over 1000 corporations have their own internal university, with GM being the first to create one in 1955.

"Joe Pelton, Cyberlearning vs. the University : An irresistible force meets and immovable object." The Futurist, Nov-December 1996

On The Horizon, Nov/Dec 97 is entirely devoted to Virtual Universities.

John Goodlad," Innovation is condoned and even encouraged, so long as it does not much threaten the way things are." In Praise of Education. Teachers College Press, 1997

Sheila Slaughter and Larry Leslie, Academic capitalism: Politics, policies and the entrepreneurial university. Johns Hopkins U, 1997

John Sperling and Robert Tucker, For-Profit Higher Education: Developing a world-class workforce. Transaction Publishers, 1997 (by the Founder and President of Phoenix.)

Medicine

Every month, researchers gather new information about which genes contribute to, or increase the likelihood of, different kinds of behavior, diseases, physical/mental characteristics, and more. A partial list includes epilepsy and mental retardation, heroin addiction, Parkinson's disease,

Boxer Brain, breast cancer, Familial Mediterranean fever, Fetal alcohol syndrome, glaucoma, obsessive-compulsive disorders (Discover, Jan 98). As more and more such genes are found, both criminal law and punishment, and education will be affected. Expect to see more arguments about the conflict between individual will, genetics, and the environment as major causes of behavior, including “criminal behavior”--or even being “socially skilled”, which arguably comes from having or not having certain genes on the X (female) chromosome.

Breakthroughs in neuroscience

The field of neuroscience is accelerating in their understanding of how the human brain works. As much as half of all our knowledge about the human brain has been gained in the last 10 years. While the complexity of the human brain will occupy us for some decades to come, neuroscientists can currently map and observe exactly which parts of the brain are active for any particular stimulus.

In addition, neuroscientists have laid to rest that old “nature vs. nurture” argument about how strongly the environment or our genes determine who we become. Their answer is both, but not simply as a split between the two forces. Rather they have observed that there is a constant and unending interaction occurring between the two. The environment constantly affects us, but they also affect the way our genes express themselves, and whether they express themselves at all. Our genes unfold and cause us to act in certain ways that puts us in different environments. This dialectical process enormously complicates our understanding of how the human brain develops and changes, but the positive side is that we need no longer fear genetic determinism and the power that genetic engineering has under this myth. In addition, we are now understanding mental illnesses as just as physiological as physical illnesses, with the hope that mental illness will lose its stigma and marginalized place in health insurance regimes.

(source: Foresight Seminar “Breakthroughs in Neuroscience” by IAF, 11/97)

Nanomedicine

While nanotechnology could be 10 to 20 years away, medical applications of nanotechnology are farther away still, as they require advances in biotechnology that are uncertain at this time. Nevertheless, there is much interesting visioning about medical futures where molecular machines play major roles in our bodily functions. Roving molecular teeth cleaners could give us low maintenance cavity-free lives. Nanotechnological white blood cells could provide barriers against any known disease by being programmable from the outside to recognize diseases that have never been encountered. Cell regenerators could float in the blood and heal wounds at astonishing rates. Cancerous cells could be specifically targeted and eliminated once and for all.

Are these things possible? They seem like science fiction. Then again, so did ray guns and walking on the moon in the 1950s, and those things happened only a decade later. We have found that it is difficult to get people to be thinking too far into the future.

End of the “Pacific Century”?

If you don't like the future, wait a minute.

Nothing is more volatile than images of the future, as we tirelessly point out. Until a few weeks ago, "everyone" was convinced the future belonged to Asia; that the economic engine of the future was China, and that the way ahead was being paved by the growing number of Asian Tigers, spawned from Japan and then Taiwan, Hong Kong and Singapore, and then to Korea, Thailand, Malaysia and Indonesia, while China grew, normalized, and readied itself for its new Great Leap Forward.

Then, suddenly, and with even less warning than the "Fall of the Wall" in Berlin, the Asian Economic Miracle has become the Asian Economic Farce, with much hooting and high-fives by many folks in the West who did not like the idea of a Pacific Century to begin with.

So is it all over for Asia? Is American clearly Number One for the foreseeable future (at least until a unified Europe comes into existence in the mid 21st Century)?

Possibly, but not likely.

The current economic crisis in Asia, which might very well spread to the US by the time these words are read, seems to have been caused more by the manipulations of investment speculators outside Asia than by any bad decisions, political machinations, corruption, or structural inadequacies in the nations currently said to be begging now for dollars and other relief.

Here is one analysis to that effect:

Date: Mon, 12 Jan 1998

From: Michel Chossudovsky <chosso@travel-net.com>

Subject: Destroying National Currencies

Since the onslaught of the debt crisis in the early 1980s, the IMF has played a central role in exchange rate policy often requiring indebted Third World countries to devalue their currency by 50 percent as a "pre-condition" for the subsequent negotiation of a loan agreement. IMF sponsored currency devaluations have invariably resulted in abrupt price hikes and a dramatic compression of real earnings.

What is distinct in the cases of Korea, Indonesia and Thailand is that the devaluation (which preceded the bail-out agreement and the imposition of sweeping macro-economic reforms) had not been explicitly demanded by the Washington based bureaucracy. Rather it was the result of speculative pressures on currency markets exerted by the large merchant banks and financial institutions (through the use of a variety of speculative instruments).

In the context of the Asian financial crisis, "institutional speculators" (rather than the IMF) have come to play an indirect role in the process of macro-economic reform. In other words, international banking and financial institutions have (in a de facto sense) dictated country-level foreign exchange policy, --ie. through the deliberate manipulation of currency markets. In this context, "institutional speculators" are involved in "setting the stage" for the subsequent IMF bail-out operation. They are also involved in routine consultations with the Bretton Woods institutions pertaining to the various components of the macro-economic reform package

included in the bail-out agreements (eg. the deregulation of Korea's financial sector and the opening up of Seoul's bond market to foreign capital).

In turn, the same Western and Japanese financial and banking institutions (routinely involved in currency and stock market speculation) are the creditors of Asia's central banks. They also hold large amounts of short term debt and have, therefore, a vested interest in averting loan default by Asian financial institutions. Not surprisingly, these same Western and Japanese financial institutions have pressured G7 governments to implement the bail-out operations of which they are the ultimate beneficiaries, --ie. the 57 billion dollars under the IMF sponsored agreement with the Seoul government will be used to reimburse Korea's creditors.

How will these multi-billion dollars operations be financed? The contribution of the Bretton Woods institutions and the Asian Development Bank (ADB) constitutes but a fraction of the total. The largest contributions to the bail-outs are from G7 governments, requiring the issuing of vast amounts of public debt.

In other words, G7 governments have come to the rescue of the merchant and commercial banks by accepting to finance the bail-out, yet to undertake this objective, G7 national treasuries are obliged to issue large amounts of public debt which is invariably underwritten by the large merchant banks. In other words, the "beneficiaries" of the bail-out are also the underwriters of the public debt operation required to finance the bail-out. An absurd situation: G7 governments are "financing their own indebtedness"...

While the bail-outs are conducive to the building up of public debts (in both the Asian and G7 countries) --thereby reinforcing the stranglehold of the creditors over the conduct of economic policy-- tens of billions of dollars of public money are transferred into the hands of private financial institutions leading to an unprecedented accumulation of private wealth. In turn, the macro-economic reforms imposed in the context of the IMF sponsored bail-outs are conducive to a dramatic collapse of the real economy leading to the impoverishment of millions of people.

Michel Chossudovsky

Department of Economics,
University of Ottawa,
Ottawa, K1N6N5

Fax: 1-613-7892050
E-Mail: chosso@travel-net.com

Labor Solidarity Forever?

As our economy turns global, national labor unions lobbying national governments are less and less effective at creating favorable labor conditions. With the rise of NAFTA, GATT, and multinational corporations, labor needs to generate some global solidarity in order to protect wages and other labor conditions.

“In early summer of 1993, leaders of more than ninety metalworker unions from around the world came back to Zurich to commemorate the International Metalworkers Federation's 100th Congress and to adopt an 'action programme' to confront global capitalism.” (p.58) But the trials of unions in Illinois who are attempting to protect \$17/hour jobs were not very compelling to unions in Kuala Lumpur attempting to keep jobs making less than \$5/day, especially since they are threatened by a Shanghai minimum wage of \$24/month. These incredible global disparities in wealth are making a shambles of labor's attempt to bond globally, making wage reductions seem inevitable until the globe evens out.

(source: One World, Ready Or Not by William Greider)

It is also frequently said that in the brave new economic world of adhococracy and impermanence, unions are an obsolete hold over from the past.

But there is evidence that a new form of unionism might be emerging, basing itself on three legs. One leg will continue to be firmly rooted in the communal past, enabling unions to continue to do what they were originally set up to do--to ensure that workers receive good pay and other benefits for their labor; have reasonable assurance that if they work well they will continue to be employed in meaningful jobs and at decent wages; and to see that their workplaces are safe and congenial. This is still a vital leg upon which unions must stand. But that is a rapidly shrinking leg, and it should be allowed, indeed made, to shrink quickly, but humanely.

The second leg is the one which can dance to the contemporary tunes of global capitalism. Unions must recognize that most of the new jobs in the future will be temporary, fluid, global, and increasingly intellectual and symbolic. This leg of unionism will make it one of its highest priorities to guarantee that all persons--and not just a privileged few--are fully educated and motivated to live in this dynamic and knowledge-based world--a very different world from the past.

Unions will also have to strive to protect the interests of workers in such a world by being themselves truly open, democratic, participatory, fluid, networked, intellectual, aware, and global (and no longer hierarchical, authoritarian, anti-intellectual, bigoted, and parochial, as too many unions still are now).

And the third leg of unionism will be set in the future, helping workers of all kinds prepare eagerly for a world without work, but still a world of material abundance, peaceful interaction, and deep cultural and spiritual, individual and communal, identity and meaning.

It is not only unions which need to have these three legs to stand on. All institutions need them. But unions may be better able to stand on all three than can most other institutions.

(For more on a possible bright future for unions, see Art Shostak <shostaka@dunx1.ocs.drexel.edu>)

Energy, Food, Water scarcity (or glut)?

Water 2010 Four scenarios for 21st Century Water Systems in US

Food security.(Future Times, Vol. 3, 1997). "Feeding the world," Review article by Graham Butler

Donald Mitchell, et al., The world food outlook. Cambridge U Press, 1997. It is GOOD. and getting better: The world can feed twice as many people in 20 years. (But may be extrapolating from old data, compared to that of Lester Brown, Tough choices. Facing the challenge of food scarcity. W. W. Norton, 1996)

Richard Pinkham and Scott Chaplin, Water 2010: Four Scenarios for 21st Century Water Systems. Rocky Mountain Institute, 1996

Hopeful Energy Trends, or Warming up to Renewables

The burning of fossil fuels is a major cause of the greenhouse effect that is warming our planet, but nuclear power contains dangers and produces waste that is deadly for thousands of years, making it an uneconomic alternative regardless of safety considerations. Fortunately, in 1996, wind energy use grew by 26 percent, while nuclear power grew less than 1 percent. Oil and coal burning expanded only 2 percent, while the manufacture of photovoltaic cells for solar power expanded by 16 percent. Granted, wind and solar energy are such small proportions of global power usage that these increases are miniscule in total kilowatts. However, the growth rates are a hopeful sign.

This is important good news, because since recordkeeping began in 1866, the 13 warmest years on record have occurred since 1979, with the four warmest coming during the nineties. Our planet is literally "warming up" to require us to use renewable energy sources. We are finally starting to move in the right direction regarding our environmental policies, but the question now is whether it is too little, too late.

(source Vital Signs 1997: The Environmental Trends That Are Shaping Our Future by worldwatch)

Conservatives Going for Environmental Protection

"Higher temperatures of surface water, particularly in the tropics and subtropics, mean more heat is released into the atmosphere. Scientists believe that this may be making storm systems more frequent, more intense, and more destructive. Weather-related insurance claims during the eighties totally \$17 billion. Thus far during the nineties, they have totalled \$66 billion.

"Deeply concerned about this rise, some 60 of the world's largest insurance companies signed a statement in 1996 urging governments to reduce emissions of carbon dioxide from fossil fuel burning."

In the US, we generally think of conservatives as being anti-environmental, representing their interests through the Republican party. But maintaining a healthy, stable biosphere requires a conservative, anti-change attitude. Perhaps we are finally getting beyond some of the partisanship of environmental policy now that major insurance companies are demanding not only economic stability, but its corollary, ecological stability.

(source: ibid)

Bicycles Rising

In response to the nightmares of too many cars, resulting in pollution, wasted time, and expensive repairs of roads and vehicles, many nations are turning to bicycles. "In 1995, bicycle factories worldwide turned out an estimated 109 million bicycles. China, with an output of 41 million bicycles, was far and away the world leader. India, now in second place with more than 12 million bicycles assembled, is emerging as a bicycle power. . .

"Many European cities, such as Amsterdam, are fostering the use of bicycles. Copenhagen provides free bicycles for use in the city. In the European Union, bicycles have been included for the first time in the comprehensive transportation plan. The United Kingdom has developed a plan to quadruple bicycle use by the year 2012."

Once the health benefits of bicycle commuting are analyzed, and it is seen as a major reducer of white collar health problems (and therefore a reducer of health costs), we can expect an even greater push toward bicycle usage.

(source: ibid)

Population

People are more mobile now than in any previous time in history. The advance of transportation technologies and their increasing affordability helps make it possible to see more of the world than most humans have ever seen. Unfortunately, while laws are being changed to ensure "free trade" and the free transfer of dollars and commodities across national borders, people enjoy less freedom than their dollars through government regulation of national borders. Illegal immigration is widespread, and we could soon see a global social movement against the regulation of human migration.

Nigel Harris, The new untouchables: Immigration and the new world worker. Penguin Books 1996. "It is worth preparing in advance for growing numbers of migrant workers, rather than thinking that controls can stop movement. Even the horrors of unregulated contract work are superior to unemployed hunger."

It is the unseen mass of people at the base of the occupational hierarchy who make America work. "One and one half times more janitors than lawyers, accountants, investment bankers, stockbrokers and computer programmers put together."

"At an extreme, we can imagine a country that is no more than a junction in flows, where no one 'belongs'."

Rockefeller Foundation, High Stakes: The US, Global population and our common future. 1997. Over the last 30 years, percentage of couples using birth control in developing countries increased from 10% to 50% and fertility is down. But global population growth still a problem. Also, 40% or more of most developing nations are under the age of 15, so their fertility decisions will impact the future. We clearly need to keep up family planning programs, but their budgets are being cut everywhere. Perhaps Ted Turner's donation to the United Nations will help keep

essential World Health Organization programs going despite the unwillingness of the US Congress to pay their fair share.

Picturing the world in microcosm

If you shrink the population of Earth to a village of 100 people:

57 would be Asian, 21 European, 14 Western Hemisphere, 8 African

80 would live in substandard housing

70 would be nonwhite, only 30 would be white

70 would be Non-Christian, 30 Christian

70 would be unable to read

50 would be malnourished

50% of the wealth would be in the hands of 6 people, all of whom are Americans

Only one would be college educated. (Future Times, Vol. 4, 1997, p 3)

Migration in the United States

Mexican Immigration Slowing, but Hispanics on the rise in the U.S.

As people have become more mobile in recent decades, distributional patterns of migration have changed. An increasing number of residents of industrialized countries are moving to developing nations, and more people are moving from poorer nations to richer ones. This type of migration, which taxes the resources of even the richest nations, has become the focus of most debates over immigration. Western Europe is expressing discontent with the influx of immigrants and guest workers from former colonies, while the United States is concerned with its growing numbers of Hispanics. But significant changes are taking place in the composition of U.S. immigrants.

“There are 24.6 million people living in the U.S. who were born in another country, according to the 1996 Current Population Survey. That’s is 9.3 percent of the population, the highest share since 1940.” Even though 27% of these immigrants hailed from Mexico, the overall proportion of immigrants from south of the border is decreasing. Numbers of Mexican immigrants have been decreasing since 1986, when strict regulations were placed on Latin American entrance to the U.S. However, despite the slowing influx of Hispanics, their numbers are on the rise. The proportion of naturalized and native born Hispanics in the United States is projected to rise from 10.7 in 1996, to 24.5 in 2050. Most of this increase is due to intermarriage among races and higher than average fertility rates among the over 28 million Hispanics currently living in the U.S. Thus, it is clear that, regardless of immigration, Hispanics will become a large component of the United States’ ethnic composition during the next century.

“Foreign Born Diversity,” Berna Miller. American Demographics, July 1997.
www.demographics.com/publications/ad/97_ad/9707_ad/ad970726.htm (12/06/97)

“Mexican Immigrants Retreat,” Berna Miller. American Demographics, July 1997.
www.demographics.com/publications/ad/97_ad/9707_ad/ad970726.htm (12/06/97)

Resident Population of the United States: Middle Series Projections 1996-2050,
www.census.gov/population/projections/nation/nsrh (1/5/97);

Asians: The Affluent Immigrants

Asian immigrants also accounted for 27% of foreign-born US residents in 1996, and they are expected to continue increasing in the future. The bulk of these immigrants come from the Philippines, China, and India. By 2050, the US Census Bureau predicts that these Asian and Pacific Islanders will comprise 8.7% of the population, increasing from 3.8% in 1997.

Even though they are a relatively small proportion of the country’s population, the characteristics of Asian-Americans make them a notable group. Not only are they more likely to be more educated and affluent than other immigrants, their socioeconomic status is also greater than the average American. “For every Asian immigrant who works illegally in a downtown restaurant, another owns a business in the suburbs. In fact, most Asian Americans live in pleasant enclaves...where the median household income in 1990 was about 60 percent higher than the national average.”

Asian immigrants are dispersed throughout the country, with the bulk of growth in Asian populations expected to take place in the metropolitan and suburban regions of the East Coast.

“Asian Americans in 2001”, American Demographics, February 1997;

“Speak my Language”, American Demographics, April 1997

Resident Population of the United States: Middle Series Projections 1996-2050,
www.census.gov/population/projections/nation/nsrh (1/5/97)

“Foreign Born Diversity,” American Demographics, July 1997.

“Natural(ized) Americans, Marcia Mogelonsky. American Demographics, March 1997.

Changing Ethnic Composition of the U.S.

As a result of immigration, naturalization, and intermarriage patterns, the ethnic composition of the US will be dramatically altered during the upcoming century. The Table below illustrates the projected decline in the Caucasian population, while numbers of Hispanics, Asians, and Blacks are on the rise. Even though by 2050 Caucasians still maintain a sizable majority, if decline occurs at projected rates past 2050, they will shrink to a minority, eventually disappearing altogether.

Resident Populations of the United States 1997-2050

(in Percentages)

Ethnicity	1997	2000	2010	2020	2030	2040	2050
White	82.6	82.1	80.5	79.0	77.6	76.1	74.8
Black	12.7	12.9	13.5	14.0	14.4	14.9	15.4
Asian & Pacific Islander	3.8	4.1	5.1	6.1	7.0	7.9	8.7
Hispanic	10.7	11.4	13.8	16.3	18.9	21.7	24.5

source: www.census.gov/population/projection/nations/nsrh

“White Flight” to the Countryside

Internally, the United States is also experiencing a great migratory shift. Whereas in-country migration in the developing world is creating great urban megatropolises, mobile residents of the U.S. favor the countryside. This phenomenon has been referred to as the new face of “white flight,” where affluent whites move away from suburbs into extremely rural agricultural communities. However, this wave of white flight is not motivated as much by race as it is by the opportunities afforded by technology.

“This trend, which began in the back-to-nature ‘70s but stalled in the ‘80s, has roared back because of powerful technological forces that are decentralizing the American Economy. The Internet and the overnight-shipping boom are enabling high-tech industries once tied to urban centers to settle in the countryside, creating jobs for skilled workers almost anywhere.”

During the 1990s, “2 million more people have moved from metropolitan centers to rural areas than have gone the traditional small-town-to-big-city routine. (In the 1980s, by contrast, rural areas suffered a net loss of 1.4 million people.) Thanks to the newcomers, 75% of the nation’s rural counties are growing again after years of decline.”

This trend is expected to continue into the future, as distance becomes less of a constraint to business activities. However, cities, and especially those in warmer areas, still remain desired destinations for some. Over the past several decades, migrants have favored warmer climates over colder regions. Thus, Southern states like Virginia will continue to experience the counter-trend of continued urbanization, although its impact will eventually be diminished by rural relocation (which may also eventually favor warmer climates).

1. “The Great Escape,” Eric Pooley. *Time*, December 8, 1997.
www.pathfinder.com/time/magazine/1997/dom/971208/cover1.htm (1/07/98)

2. *ibid.*

3. “Cold Comfort,” Brad Edmondson. *American Demographics*, November 1997.
www.demographics.com/publications/ad/97_ad/9711_ad/ad97115.htm (12/04/97)

Demographic Issues in the Developing World

The Population Explosion is NOT Over

Global fertility rates are beginning to decline sharply, although the population explosion is far from finished. In 1996, the average woman gave birth to just under 3 children in her lifetime. By 2020, that number is expected to decline to 2.2 births. While significant in itself, this aggregate figure does not reflect the drama occurring in regions such as Sub-Saharan Africa, where fertility is expected to drop two entire points from an already reduced 6 in 1996 to 4 in 2020. In recent decades, family planning efforts in the developing world have begun to pay off, and women are bearing less children. Fertility in industrialized nations, while initially much lower than in poorer countries, has also declined during the latter half of the twentieth century.

Despite steadily falling fertility levels, high birth rates persist in developing nations. Such a condition is a result of the fact that high birth rates in past decades have resulted in disproportionately young populations among the world's poorer countries. Developing nations, which account for nearly 80% of the world's population, had an average age of 23 in 1996-- 13 years younger than industrialized countries. Even with significant fertility declines, such a large proportion of youth, especially young women, keep actual birth rates high. As a result, despite falling rates of growth, actual numerical decline of world population is not expected to occur until well into the latter years of the twenty-first century.

Despite the decline in fertility levels and growth rates, world population continues to increase every day. However, critics of population policies are beginning to argue that growth has been effectively managed, and that the international community should now turn its attention to other pressing matters inhibiting development. If such a shift happens within the next decade, the result could be disastrous.

After 50 years on the international agenda, population planners are beginning to recognize that fertility levels are, in many ways, a reflection of social conditions. As a result of that recognition, program mandates have been expanded to incorporate a variety of factors, most notably gender issues. The 1994 International Conference on Population and Development (ICPD) officially recognized the intimate connection between women's lives and fertility by highlighting the centrality of gender to population concerns. It explicitly linked issues of women's status to the population debate, and advanced a set of directives intended to empower women. The broader understanding of population and reproductive rights that emerged from this conference is generally considered to represent an extremely positive advancement in thinking on population, development, and gender. Unfortunately, because empowerment is often presented as a means for limiting population growth, the end of the "population explosion" may also bring the end of the reproductive rights movement in the developing world.

"The Population Explosion is Over," Ben J. Wattenberg. New York Times Magazine, November 30, 1997.

"World Population Profile: 1996," Thomas M. McDevitt. www.census.gov/ipc/www/wp96.html (12/15/97)

Programme of Action Adopted at the International Conference on Population and Development, Cairo, 5-13 September 1994. United Nations: New York 1995.

Aging Boomers

The great demographic bulge known as the baby boom is beginning to move its way into the latter portion of the life cycle. Americans born between the years of 1946 and 1964 are generally considered to be boomers. While European nations experienced an increase in fertility following World War II, the bulk of the boom occurred in the United States. This generation, which shaped and was shaped by the social upheaval of the 1960s, is currently between the ages of 34-52. However, this disproportionately large cohort is quickly approaching retirement and old age. Beginning in the year 2010, when the first boomers reach age 65, Americas elderly population will soar to nearly twice its present number. By 2030, nearly all of the boomers will have entered retirement, and the older members of the cohort will live longer than their predecessors. Not only are the numbers of elderly expected to increase as more people enter the ages of retirement, but those boomers over 65 will enjoy a longer life expectancy. In fact, the 85+ population is currently the fastest growing age group, and will continue to expand as the baby boomers begin to join its ranks. Thus, the United States can expect to see a rise in its elderly (and extremely elderly) populations for at least the next 50 years.

Estimated Distribution of American Population over Age 65 (in Percentages)

YEAR	65 to 74 years	75 to 84 years	85+ years	Total % over 65
1997	6.9	4.4	1.4	12.7
2000	6.6	4.5	1.6	12.7
2005	6.4	4.5	1.7	12.6
2010	7.1	4.3	1.9	13.3
2020	9.7	4.8	2.0	16.5
2025	10.6	5.8	2.1	18.5
2030	10.8	6.8	2.4	20.0
2040	8.9	7.7	3.7	20.3
2050	8.8	6.6	4.6	20.0

Source: U.S. Bureau of the Census, www.census.gov/statab/freq/97s0017.txt
(1/5/98)

Sources:

“American Generations”, *American Demographics*, January 1997
www.demographics.com/Publications/AD/97_AD/9701_AD/9701A24A.HTM (12/6/97)

The Older Population, Administration on Aging
www.aoa.dhhs.gov/aoa/stats/profile/#older (12/04/97)

Caregiving, American Association of Retired Persons

www.aarp.org/wwstand/caregiv.html (12/02/97)

Living Better, Longer

The elderly baby boomers will challenge conventional conceptions of aging. As a highly educated, economically successful cohort, boomers will eschew the social constraints placed on the aged. Recent advances in health care and healthier behaviors have begun to influence not only longevity, but are leading to more active lifestyles among older people. Today's elderly are beginning to demonstrate an attitudinal shift regarding their role in society, and the emergent understanding of their capabilities will be further expanded in the next century. As droves of boomers enter old age, they will continue to build on the advances made by today's active elderly. However, as a result of their great numbers and unique demographic characteristics, when baby boomers begin to reach the age of 65, much of society will be reorganized to meet their needs.

Sources:

www.thirdage.com, Third Age (12/02/97)

www.aarp.org American Association of Retired Persons (12/02/97)

An End to Social Security?

As people grow older they tend to become more politically active. This is especially true for the boomer generation, whose political involvements in the 1960s and 1970s defined the times. However, their interests will have changed by the 2010s, concentrating on issues relevant to the elderly such as consumer fraud and salvaging social security. While many analysts are concerned that such a large bulge of retirees will tax the national pension system to the breaking point, there is evidence that mobilization among the boomers will stall the collapse of the system. Campaigns to save Medicare and social security have been launched by advocacy groups such as the AARP, and public sentiment remains sympathetic to such transfer payments. A recent study conducted by the Kaiser-Harvard Program on the Public and Health/Social Policy revealed that more than half of Republicans and three-fourths of Democrats would accept higher taxes to see the government spend more on long-term care for the elderly. Because the boomers are beginning to dominate the political system, they are in a position to ensure a secure future for their aging numbers.

Sources:

"Medicare: Go for Broke", American Demographics, January 1997.

www.demographics.com/Publications/AD/97_AD/9701_AD/9701A28C.HTM (12/06/97)

Where We Stand: Issues and Advocacy, American Association of Retired Persons. www.aarp.org/where.html (12/02/97)

Medicare: Issues and Challenges, American Association of Retired Persons. www.aarp.org/monthly/medicare2/1issues.htm (12/02/97)

Marketing to the Elderly

Expanded markets for goods and services have followed the boomers throughout their life span, by virtue of their large size and affluence. Their old age will be no exception, so we can safely assume that as they age, more and more companies will market to the aged. In fact, they will be one of the largest aged cohorts in history. Although their actual income will drop following retirement, affluent boomers are expected to maintain high levels of consumption. Because the economy will be dominated by older consumers in the next decade, businesses are beginning to develop products intended for the elderly. All facets of the economy will be affected by this demographic change in which, altogether, **the 55 to 74 contingent will outnumber 25-34s by 18 million.**

Not only will retailers and other merchants have to develop products intended to meet the needs of this traditionally underserved market, but the service sector will have to expand as well. Beginning around 2010, an increased demand will arise for services and facilities such as: nursing homes, specialized fitness centers, elderly-only housing developments, and mobile caregivers.

Sources:

“The Ungraying of America”, *American Demographics*, July 1997
www.demographics.com/publications/as/97_ad/9707_ad/ad97073.htm
(12/06/97)

“Boom Gone Bust”, *American Demographics*, May 1997
www.demographics.com/publications/ad/97_ad/9705_ad/as970513.htm (12/06/97)

Caregiving, American Association of Retired Persons
www.aarp.org/wwstand/caregiv.html (12/02/97)

The Elderly On-Line

Computer usage, already an obsession with many baby boomers, will increase among the elderly in the next decade. As a result of increased free time, decreased mobility, and computer literacy campaigns, the baby boomer generation may be the most computer reliant cohort in history. While today’s youth may be the most comfortable with new technologies, the elderly may utilize electronic media more effectively for daily living. As age and decreased resources begin to limit the elderly’s abilities to conduct activities outside the home, they will attempt to meet their needs within the virtual community.

The anonymous communication found on the web helps dissolve the boundaries of age, but it also enhances age-specific interests. A number of websites intended exclusively for the elderly have arisen in recent years. A recent survey conducted by one of these sites notes that 14 percent of people who use the Internet are over 50, 83 percent of that population logs on daily, and they frequent the big search engines and download software just as often as the younger generations.³ In order to better serve and enhance this community, AARP and Microsoft have launched an educational program aimed at introducing older adults to computers and demonstrating how it can empower them to:

Connect and communicate easily with friends

Increase their prospects for continued employment
Research and understand retirement options in housing, investments, budgeting and government services
Access information about medical conditions and treatments
Cultivate new interests and enhance existing ones

Sources:

The Wired Ager, Third Age. www.thridage.com/features/tech/survey
(12/02/97)

Microsoft, AARP Announce New Alliance to Provide Technology Springboard to Older Americans, American Association of Retired Persons Press Release, December 11, 1997
www.aarp.org/press/pr121197.htm (1/05/97)

Special Sites for Third Agers: Just for Folks over 50, Third Age.
www.thridage.com/features/other/701/over.html (12/02/97)

“Freeing up the Golden Years”, American Demographics, October 1997
www.demographics.com/publications/ad/97_ad/9710_ad/ad9710toc.htm
(12/04/97)

Still Working After All These Years...

One developing trend for those who cross the 50-year mark is to take up a new career. Whether it is a mid-life career shift, an occupation taken up in lieu of retirement, or a voluntary commitment, the elderly are continuing their involvement in the community well into their later years. Because the elderly are healthier and more active in their later years, they are able to pursue interests developed over the course of their lifetime. Advancements in medical care that are expected to develop as baby boomers age will further increase vitality as the human life span continues to lengthen. Such developments will be responsible for a longer work-life, creating the possibility for multiple careers and a large pool of volunteer labor. However, eventually, the retirement age may be raised in order to keep more knowledgeable and experienced workers in their primary career.

Sources:

www.thridage.com/special/careers/ (12/02/97)

Volunteers in Support of the Sheriffs Office
legal.firn.edu/sherriff/palmbch/voluntr.html (12/02/97)

Workforce Changes: Moving Your Business into the New Millenium,
www.sremploy.org/olderw.html (1/05/98)

AIDS, Sex, and Marriage for the Free Love Generation

Family structure will also be changing as the baby boomers enter retirement. Despite high divorce rates, men's increasing longevity, and the prevalence of remarriage, more couples are celebrating their 50th wedding anniversaries. According to a recent study, those couples who have been married for 35 years or more are likely to be happier with their relationship than on the day they wed. Thus, not only are more couples staying married longer, they are happier in their later years. As great numbers of boomers reach both milestones, older couples will both be more frequent and more content. Such contentment, combined with the advancements in assisted reproduction, could spark a surge of motherhood among elderly women.

Further, increased sexual activity is making AIDS an issue among the aging. Data from the Centers for Disease Control indicate that, due to physiological and behavioral factors, people over 50 are most likely to get AIDS via heterosexual contact--in fact, they're more likely than any other age group to contract the virus in that way.

Sources:

AIDS in the Third Age,

www.thirdage.com/features/healthy/aids/index.html (1/06/97)

"The Lifecycle of Marriage", American Demographics, January 1997

www.demographics.com/Publications/AD/97_AD/9701_AD/9701A28A.HTM (12/06/97)

"Fading Golden Tributes", American Demographics, January 1997

www.demographics.com/Publications/AD/97_AD/9701_AD/9701A28B.HTM (12/06/97)

The Older Population, Administration on Aging

www.aoa.dhhs.gov/aoa/stats/profile/#older (12/04/97)

Changing Gender Relations in the Workplace

Salary Parity

Men and Women workers in the United States are finally approaching salary parity. Reversing decades of wage discrimination, women are beginning to collect similar, and even higher, wages for their labors in some occupational categories. Significant gains are seen both in traditionally feminine fields, such as child care, and in male-dominated sectors like medicine, science, and technology. Currently, women have a higher median income than men as psychological therapists. Child-care workers have seen their wages increase by 30 percent in the last 5 years, the vast majority of whom are women.

As women's contributions to the work force are given more monetary value, gendered divisions of labor will continue to erode. Such a reorganization will lead not only to the incorporation of more women in a variety of fields, but will challenge traditional ways in which work is conducted. With the dominance of global capital, this trend is not limited to the United States, or even to the Industrialized Nations of the World.

Source:

“Where Women Out-Earn Men”, Berna Miller. *American Demographics*, June 1997. www.demographics.com/publications/ad/97_ad/9706_ad/ad970611.htm (12/06/97)

Tenure Turmoil

In conjunction with promoting salary parity, the corporate world is also hastening a gendered structural reorganization within the labor force by altering tenure prospects. The average tenure for workers is declining, an occurrence which disproportionately affects the male worker who has

come to rely on stable employment. Women, who have often been viewed as temporary members of the work force, may be the beneficiary of such a development. Although still lower, the average tenure for a 45 to 54 year old working woman remained stable during the period between 1983 and 1996 at 7 years. During that same time span, men saw their occupational longevity erode from 13 to 10 years. This development suggests that women are in a position to take advantage of corporate preferences for shorter-term labor. Because they are less likely to expect life long employment, women will be more able to adapt to the work force of the future. As a result, because they do not have a vested interest in traditional corporate behaviors, women will excel in the new, less secure, business climate.

Source:

“Decline of the Company Man”, Diane Crispell. *American Demographics*, April 1997. www.demographics.com/publications/ad/97_ad/9704_ad/ad970410.htm (12/06/97)

Changing Household Structure

Teenage Mothers and their Children

Of all the babies born in the world, one in ten is born to an adolescent. Even though the teenage birth rate is declining globally, it has yet to make substantial declines in the U.S. In fact, as the table below demonstrates, births to teenage mothers in the U.S. has increased slightly from 1985 to 1995. While this rate is not as high as in most developing countries, it is the highest among industrialized nations. The bulk of these births occur to women who are members of minority groups. In 1994, four groups accounted for over 81% of teenage pregnancies carried to term: Blacks 23.3%, Native Americans (American Indians, Eskimos, and Aleutians) 21.0%, Hawaiians 19.6%, and Hispanics 17.8%.

Total Births to Teenage mothers as a Percentage of all U.S. Births 1985-1994

1985 1989 1991 1992 1993 1994 1995

12.7 12.8 12.9 12.7 12.8 13.1 13.2

source: Statistical Abstract of the United States, 1997.
www.census.gov/prod/3/97pubs/97statab/vitstat.pdf (1/08/97)

Sources:

“Young Mothers”, Berna Miller. *American Demographics*, June 1997
www.demographics.com/publications/ad/97_ad/9706_ad/ad970621.htm (12/06/97)

Statistical Abstract of the United States, 1997.
www.census.gov/prod/3/97pubs/97statab/vitstat.pdf (1/08/97)

Fertility Indicators for Never-Married Women 15 to 44 Years Old by Selected Characteristics: June 1990 and 1995, U.S. Bureau of Census.
www.fedstats.gov/index20.html (1/08/97)

www.census.gov/statab/www/states/va.txt (1/01/98)

Unmarried Mothers on the Rise

Just as teenage mothers are increasing in the U.S., so are single mothers. However, the emerging group of single mothers is qualitatively different from its younger counterparts, and offers much different prospects. The proportion of children born to unwed mothers in the United States has been steadily increasing, reaching an all-time high of 32.6% in 1994. Moreover, the country's fertility rate has not changed substantially over the past decade, while the marriage rate has fallen and the divorce rate has increased. Together, those figures point to the fact that there are more unwed mothers in the country than ever before. This trend is not isolated to the U.S. The number of births to unmarried women in European countries has rapidly increased to the point that in 1992 50 percent of the children born in Sweden were illegitimate, as were 46% of Denmark's newborns.

As single motherhood has become an accepted phenomenon in the industrialized world, it has lost much of the stigma that was attached to it before the 1970s. This is partly a result of the fact that illegitimacy and divorce has moved out of the exclusive domain of the poor and has become a part of middle class life. Even though single mothers are typically poorer than their married counterparts, the economic penalties of independent motherhood are decreasing as women's wages rise. Further, their growing numbers allow them greater representation in public life. Currently, emerging incorporation into the political mainstream has produced a series of legislation favorable to single mothers pursuing delinquent child support payments. As prosecutors and government agencies become more adept at exacting payments from dead-beat-dads, an unprecedented redistribution of wealth from men to women is possible. Therefore, in coming decades, as single mothers grow to comprise a larger, more vocal segment of society, their interests might be more immediately served by their governments.

Sources:

Fertility of American Women: June 1994, Amara Bachu.
www.fedstats.gov/index.html (1/08/97)

U. S Bureau of the Census, Statistical Abstract of the United States,
1997. www.census.gov/prod/3/97pubs/97statab/vitstat.pdf (1/08/97)

Marriage: A Thing of the Past?

Recent debates over same-sex marriage has officially introduced the possibility of non-conventional unions into mainstream consciousness. The weakness of arguments against broadening the institution point to the inevitability of homosexual unions. Once marriage is redefined to incorporate all types of relationships, its future is uncertain. Once its sanctity is perceived to be destroyed, heterosexuals may find that the institution has lost its meaning. No longer an exclusive tradition, marriage may be abandoned by its traditional adherents and become a source of legitimacy for a variety of yet unseen relationships that arise out of technological and social innovation.

However, the end of marriage may not become a reality in the near future. The cohort known as Generation X, now reaching marriage age, is reversing modern trends by establishing households at a younger age. In direct opposition to their parent's generation, and previous expectations for the cohort, X-ers have thrown off their wild reputation and begun nesting in their early 20s. In only 7 years the average age at first marriage has decreased from 27 in 1990 to 24 in 1997. The rediscovery of domesticity which defines today's young adults could signify a larger re-valuing of the institution. However, it is more likely that this trend represents a deviation from the larger progression away from traditional household arrangements. In an effort to ground themselves in a rapidly changing world, it is possible that these X-ers are grasping onto images of the past in an attempt to flesh out their own unique identify.

Sources:

"Witness: Kids belong in biological family", Linda Hosek. HonoluluStar-Bulletin, September 13, 1996.
starbulletin.com/96/09/13/news/index.html (1/08/97)

"The Young and the Nested", Tamala M. Edwards. Time, November 10, 1997
www.pathfindeom/time/magazine/1997/dom/971110/living.the_young_and.html
(1/08/97)

Working at home, working at other people's homes

The division of labor is changing within the American family. As more women take up full-time professional employment, they are no longer able to devote a significant proportion of their time to domestic matters. Myriad products and services have offered relief to the overburdened modern woman, but changing gender roles may ultimately ease her load. The number of men taking part in household maintenance and child rearing activities has gradually increased over

the past several decades. This trend is changing the way households operate. While men are taking on more of the responsibility, their participation in household responsibilities is not reversing traditional gender behaviors, but encouraging equity.

Such a development will not cause a shift of the infamous “double burden” to men, rather it will disperse the work more evenly between household members. However, despite the fact that more people are becoming involved with household maintenance, both men and women are choosing to spend less time on housekeeping. As this occurs, less stress is being placed on the traditional hallmarks of a good homemaker, such as a spotless house or homecooked meals. If time spent working outside of the home continues to increase, many domestic duties may be performed by outside parties contracted to provide such services, often outside the household itself. However, if, as many argue, work moves back into the home, the household will regain centrality in American life. The breakdown of the traditional division of labor within that sphere would then represent significant accomplishment for promoting gender parity.

Sources:

“The New Face of Homemakers,” Jan Larson. American Demographics, September 1997.
www.demographics.com/publications/ad/97_ad/9709_ad/ad97098.htm (12/06/97)

“Good-bye to the White Glove,” Kevin Heubusch. American Demographics, January 1997.
www.demographics.com/Publications/AD/97_AD/9701_AD/9701A39.HTM (12/06/97)

“Dances with Dust Bunnies: Housecleaning in America,” John P. Robinson and Melissa Milkie. American Demographics, January 1997.
www.demographics.com/Publications/AD/97_AD/9701_AD/9701A37.HTM (1/09/97)

Empty Nesters on the Rise

The number of married couples without children is increasing. While much of this rise is due to the departure of adult children from baby-boomer households, growing numbers of young married couples are also contributing to this trend. The reproductive decisions of these newlyweds will determine the future population level of the United States. Because the cohorts following the baby boom were significantly smaller than their predecessors, unless fertility rates increase, national population levels could drop.

The experience of countries like France and Italy provide an example of societies where fertility has fallen below replacement levels. Women in these two countries tend to chose career over family with more frequency than in any other part of the world. Thus, with total fertility rates (TFR) of 1.49 and 1.27, France and Italy, respectively, have the lowest rates of reproduction in the world. While the United States TFR is currently 2.06 and not projected to change substantially during the next 15 years, small alterations in reproductive attitudes on the part of newly married generation-Xers could bring about the same drop in fertility that Europe is presently experiencing. This would result in not only smaller families, but a changing ethnic composition and a predominately older population.

“Married, No Kids,” Berna Miller. *American Demographics*, April 1997.
www.demographics.com/publications/ad/97_ad/9704_ad/ad97049.htm (12/06/97)

The CIA World Factbook page on Italy. www.fedstats.gov/index20.html
(1/10/98)

The CIA World Factbook page on France. www.fedstats.gov/index20.html
(1/10/98)

Statistical Abstract of the United States, 1997.
[Www.census.gov/prod/3/97pubs/97statab/vitstat.pdf](http://www.census.gov/prod/3/97pubs/97statab/vitstat.pdf) (1/08/97)

An End to the Nuclear Family

Although more women may continue to choose career over motherhood, technological advances are making reproduction a viable option for all types of prospective parents. A variety of widely available fertility treatments can now make every woman fecund, regardless of her age. Techniques such as artificial insemination and external gestation serve to make the participation of both partners obsolete. Developments looming on the horizon such as cloning and genetic engineering will speed the pace of the reproduction revolution.

As soon as procreation becomes divorced from its current biological constraints, childbearing will no longer be an exclusive activity. Once the burden of perpetuating the species is lifted from women, social organization will be completely transformed. Not only will reproduction become completely un-gendered, but it will also become available for non-traditional parents. Single men, homosexual couples, and even non-human entities will be able to raise their own offspring. Because reproduction would be no longer tied to biological processes, the age for parenthood could be extended throughout the lifespan. As a result, current conceptions of family and kinship will be radically redefined.

The possibilities of genetic engineering and cloning will also irreversibly change the nature of reproduction in the next century. Not only will a more diverse group be able to have children, but they will also be able to determine their prodigy's characteristics with an astonishing degree of accuracy. Such medical technology may be instrumental in creating greater divisions between the worlds rich and poor. Because genetic superiority would be dependent on the parent's access to sophisticated medical treatment, many who can not afford these services would be forced to produce inferior children. As a result, ever-present divisions of wealth within the United States and among nations of the world would be perpetuated in the bodies of youth.

The legal issues stemming from assisted reproduction are currently exploding, and will continue to proliferate as the techniques become more controversial. Acceptable ages for parenthood might be established legally as the process will be no longer constrained by biological limitations. Also, it will be necessary to explicitly define to whom or what parenthood will be restricted; or will all intelligent beings, whether natural or artificial, be enfranchised. Further

difficulties will arise from human cloning such as: can individuals clone themselves; can people be cloned without their consent; how many clones of one person can be generated, etc. Finally, genetic engineering presents a similar litany of complications. Today ethicists argue as to the right of insurance companies to know of any genetic predispositions to illnesses, but tomorrow the argument may

revolve around the ability of health care providers (or the government) to require the elimination of certain undesirable characteristics. Will genetic engineering be the prerogative of the rich, or should it be guaranteed to all? The marketing and commercial distribution of such technologies also raises serious ethical concerns. Questions such as these, as well as ones that can not anticipated, will force issues associated with assisted reproduction into the forefront of legal debate throughout the next century.

“Ethics of Assisted Reproduction, Womens Health Issues 1997.
www.elsevier.nl:80/inca/publications/store (11/28/97)

“Gender Justice in Genetics,” British Fertility Society Journal 1997.
www.bris.ac.uk/depts.obs gyn/bfs (11/29/97)

“Talk of the Nation: Science Friday,” National Public Radio, 1/9/98.

Military Down Worldwide

“The number of men and women in military uniforms is dropping steadily, reports Senior Researcher Michael Renner. In 1995, the last year for which data are available, it totalled 23 million, down one fifth from the historical peak of 28.7 million in 1988.

“A similar trend has emerged with armaments. The number of battle tanks deployed worldwide declined from 172,000 in 1993 to 119,000 in 1996. Meanwhile, the number of active combat aircraft dropped from 40,000 to 31,000.

“For some countries, disarmament is not enough. Four countries now have no army at all: Costa Rica, which disbanded its army in 1949, has been joined by Iceland and, most recently, by Panama and Haiti, when the US Military overthrew their military dictatorships. Still more countries are considering disbanding their armies.”
Vital Signs 1997)

This does not mean that national security is any better than it has been in the past. Rather, we are facing new national security threats that are not really combatable by large armies, tanks, or nuclear weapons. Some of the rising threats are:

Terrorism

Militia and "Natural Law" adherents

Environmental conflicts (water, food, fish, plagues, migrants)

Economic conflicts (rich/poor; enclaves of each)

Electronic sabotage, "hacking"

Sources:

James Dunningham, Digital Soldiers: The evolution of High-Tech Weaponry and Tomorrow's Brave new Battlefield. St. Martin's Press, 1996

Ed Regis, "Biowar," Wired, Nov 96. Not just biological weapons but biosensors, biochanging camouflage, organisms that destroy tires or other rubber parts, contaminate fuel, turn metal to goo, destroy computers. Grow food, supplies through nanotech, wounds healed,

Sex vs. cybersex

Two fascinating articles in The Futurist reviewed developments in "cybersex", noting considerable consumer satisfaction from the various products recently tested.

Among the more provocative implications suggested is that, since male and female sexual response and sexual preferences are often so different--indeed because individual differences in sexual satisfaction per se are so great regardless of gender--cybersex might very well replace the old-fashioned method of sexual intercourse entirely, or at least largely.

Ongoing rapid developments in "test tube babies" and genetic engineering generally might indeed see not only the completion of the separation of sexual intercourse from human reproduction, but sexual intercourse from human interaction altogether.

Men and women might well learn finally how to be friends without sex being any part of interaction at all.

This is an issue we first discussed in an article twenty-five years ago (itself based on speculation about "Intersex" and "Cybersex" by Donald Kenzotaki in 1969) (James Dator, "Some possible communication technologies in the future," in Jim Richstad and L. S. Harms, ed., World Communication. East-West Center Press, 1973). It is interesting to see that the technology is beginning to catch up with the forecast.

Joel Snell, "Impacts of Robotic Sex," and Kenneth Maxwell, "Sex in the future: Virtuous and virtual?" The Futurist, July-August 97

Futurists' Forecasts

"The future is in beta." Wired, Jan. 98

Freeman Dyson, Imagined Worlds. Harvard U Press, 1997: "It seems that the modern world has grown increasingly short-sighted in recent years, as if the collapse of socialist economics and the victories of the free market have made all long-range visions of the future illusory."

This also corresponds to a statement we have been making for the past several years: "The more democratic and market-oriented a polity becomes, the less future-oriented it becomes."

To the extent American state judiciaries are (ever so slightly) future-oriented, their contribution towards balancing the needs of future generations against the desires of present generations becomes even more vital.

The Washington, D.C., futurist, Joe Coates, produced interesting scenarios for 2025 which focus on:

Smart materials

Global information network

Genetics

Energy--rapid decline of oil (due to political, environmental reasons)

"World of things"--water desalination with new membrane technologies, erosion abatement materials, inground polymer membranes to protect aquifers

Sustainability requires more regulated societies, but it is obtainable

Managing the planet:. Coates anticipates the establishment of a "Vision for the Planet" formed in 2022

Both Watts Wacker and Paul Krugman (in the New York Times Magazine, Centennial Issue, September 29, 1996), say we are becoming a "celebrity economy" rather than a "knowledge economy" (Krugman says many jobs once requiring a college degree are being eliminated). "Celebrity has become our number-one mass motive." says Wacker. A recent New Yorker cartoon shows a fortune teller saying to her client: "In the future, you will have 15 minutes of privacy". Wacker concludes that successful companies should increasingly treat their customers like celebrities [which some companies are obviously now doing as any one who has reached the upper echelons of her frequent flyer program can attest]. (From Watts Wacker and Jim Taylor, The 500-Year Delta: What comes after what comes next. HarperBusiness, 1997)

Since judiciaries, and the Virginia judiciary especially, are being encouraged to treat the people who require their services as "clients", does this also suggest they should begin to treat those who require them frequently as "celebrities"?

Wacker also tells how to be your own futurist:

Be a better listener (and listen to ALL kinds of people. Watts allegedly takes Mcjobs in order to hear what ordinary and subordinate people are talking about.

Once a week, read a trade magazine from a different industry.

Let your kids tutor you

Volunteer

Read what has stood the test of time (and learn why)

Edith Weiner and Arnold Brown (Insiders Guide to the Future. Boardroom, Inc., 1997) describe a future of “The Emotile Era” where emotion (a heightened concern for personal well-being) and mobility (fast movement and rapid change) will be future society's dominant characteristics.

Afterword

As we said in the 1995 scan, “Future shock is still clearly still upon us.” We expect to be saying that for quite some time into the future. While the desire for foresight continues to increase as organizations recognize the need to adapt in order to survive, the pace of change in the world today is increasing even faster. As can be intuited from the material above and below, there just aren't enough pages to describe all of the enormous changes occurring around us.

We have tried to provide some outlines of the most crucial changes, suggest some possible implications that can help one consider different possible futures, and point toward sources to investigate these phenomena further, but it is clear that this is just the tip of the iceberg. Rarely has it been so clear as it is in this day and age that partial, fragmented perceptions are all that is possible. And yet, we cannot let this inevitability paralyze us from taking necessary action based on what we believe we do know.

The justice system faces unique challenges in being on the front lines of interpreting and adjudicating conflicts over change. As the world changes, old laws are rendered ambiguous or obsolete, requiring careful definition and reconstruction. At the same time, we know that this is a never ending process, and the more one can inject foresight and awareness of possible futures into decision making, the better we will be suited to handling the tsunamis of change heading toward us.