

Timeline

Email Edition

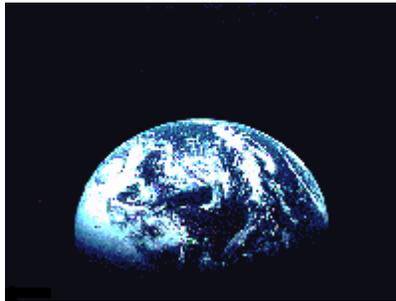
September/October 2000 - No. 53

A Publication of the Foundation for Global Community

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Nobel Laureates on Our Global Future

Book Review by Mac Lawrence

Eight Nobel Peace Prize winners from five continents met in 1998 for two days to talk about what it will take to build a world in peace. The highlights of their conversations are presented in the book *The Moral Architecture of World Peace: Nobel Laureates Discuss Our Global Future* by Helena Cobban.

Some of the eight laureates were widely known before they received the Peace Prize: Archbishop Desmond Tutu, the Dalai Lama, former Costa Rican president Oscar Arias Sánchez. Others were less well known: Bobby Muller, a paraplegic Vietnam veteran who co-founded the International Campaign to Ban Landmines (ICBL); Jody Williams, who led the ICBL campaign, gathering a network of 1200 supporting NGOs in 50 countries; José Ramos-Horta who worked tirelessly for the independence of East Timor; Betty Williams, who co-founded a grassroots peace movement in Ireland; and Rigoberta Menchú Tum, a Mayan from Guatemala involved in UN activities on behalf of indigenous peoples. A ninth invitee, the Burmese activist San Suu Kyi, was kept in Rangoon under military threat but was represented by a colleague. Moderating the conversations was Julian Bond, chair of the NAACP and a history professor at the University of Virginia, where the event was held.

In her introduction, Cobban notes: “They came at midpoints along personal journeys that had taken each of them

through the fire of conflict and the wasteland of searing loss—journeys that have also taken them toward a greatly increased awareness of both the interconnectedness of all humankind and the negative consequences of violence. They came bearing personal stories that showcased the power of the human spirit.”

Cobban devotes a chapter to each of the participants, relating their often heart-rending stories, the actions they took, and what each sees is needed next. Everywhere the passions that motivate them come through.

RIGOBERTA MENCHÚ TUM

Menchú’s life was scarred by constant violence against her peasant class. Mother raped, tortured, killed; brother tortured, killed; father mowed down in an assault by Guatemalan troops that violated every international norm of diplomatic immunity. Yet, as the chairman of the Nobel Committee declared: “By maintaining a disarming humanity in a brutal world, Rigoberta Menchú Tum appeals to the best in all of us, wherever we live and whatever our background.”

JOSÉ RAMOS-HORTA

Ramos-Horta’s passion came from the injustice of having his tiny but mineral-rich homeland of East Timor overrun by “a strong, U.S.-backed Indonesian military.” Tens of thousands of his people were massacred, starved to death, and died of war-related disease, and a foreign language and culture forcefully imposed. Even so, Ramos-Horta realized that if East Timor should achieve

independence (as it just recently has), it would need to have healthy, long-term relations with Indonesia. “I still believe,” he said, “that in the long run, beyond the band-aid type of diplomacy which is peacemaking and signing treaties, you actually need to go for community dialogue.”

BETTY WILLIAMS

When asked why she started the peace movement in Northern Ireland, Betty Williams answered: “The truth is, I did it for purely selfish reasons. Their names are Deborah and Paul, my children. I really didn’t want my babies to be brought up in a society that was destroying children. I believe that women have a huge role to play in creating a just, nonviolent, and peaceful world.” Since moving to the U.S., she has continued to work worldwide to save and rehabilitate “the youngest survivors of man-made disasters,” including founding an organization called the World Centers of Compassion for Children.

“I have to sit in rooms with men who justify military budgets by telling me it’s for defense. Do you know what I say? ‘No doubt the dead and dying are very grateful that you’re defending them so well!’ The insanity of what’s going on militarily in the world has got to be challenged—not [only] by me or anybody else who’s supposed to have a ‘famous name;’ The insanity of that has got to be challenged by every single one of you, *every one of you!* They call us idealistic fools. That’s the one name [they call me] that I object to the most. It’s not idealistic to say that the world must begin to live together without guns or bombs,

or better and bigger ways to destroy each other!”

OSCAR ARIAS SANCHEZ

Sharing Williams’ passion about weapons was Oscar Arias. In 1995, he proposed an International Code of Conduct of Arms Transfers: Arms could only be sold or given to countries or parties that complied with a long list of democratic and human rights standards. At the conference, he also focused on other issues involved in moral architecture, including the impacts of globalization and the disparities between rich and poor. “There is,” he said, “a need for global citizens to demand a new ethics for the new millennium. Human security goes beyond concern with weapons—it is a concern with human life and dignity. When we demand peace, it must be not only a peace which halts the bombing and gunfire [but] a peace concerned with the welfare and health of all people. For truly, when poverty and inequality remain at such terrible levels, armed conflict will be inevitable.”

TENZIN GYATSO, THE FOURTEENTH DALAI LAMA

His Holiness, the Dalai Lama, focused on non-violent action, on motivation which he believes is “the prime mover,” and the need for “inner disarmament” and dialogue. He also talked about “external disarmament,” not only in the sense of working for a totally demilitarized world (a long-term goal, he admitted), but confronting the problems of population and the environment. “These are not a question of my nation’s survival,” he said, “...[but] the survival of humanity! They are our common responsibility to

tackle. Compared to these bigger things, small, small things within ourselves are minor.” He concluded: “In spite of difficulties, remain with optimism. These things can change, can be overcome. That kind of determination and hope, I think, is the key for a brighter future.”

ARCHBISHOP DESMOND TUTU

Bishop Tutu focused on how emerging democracies can deal with, and get beyond, grievances committed in the past, a subject which resonated with all of the participants.

He outlined four ways: One is revenge—you clobbered me, I clobber you back. To see how it works, he pointed to the example of the Tutsis and Hutus.

A second possible response is a war-crimes trial like Nuremberg, which followed a war in which there were clear winners and losers, “justice” could be enforced, and after the trials, the judges and prosecutors could pack their cases and leave. But most situations are not that clear cut, he noted, and judges, prosecutors, victims, and perpetrators alike have to stay and figure out how to live together.

A third option is do nothing. Forget the past; get on with the business of living. That option would not have worked in South Africa, Tutu argued: “It would only revictimize the victim by saying, ‘What happened to you doesn’t matter.’”

The fourth response—the one that did work in South Africa—was setting up a Truth and Reconciliation Commission, of which Tutu is the retired chairman. Its principle: If you tell the truth, you’ll get

amnesty. If you don’t tell everything you know, reconciliation is not possible.

BOBBY MULLER

Muller and Jody Williams both received the Nobel Peace Prize for their work to ban landmines. Muller, a 130-pound college senior, was entranced by a 220-pound “ultimate stud” recruiter, and joined the Marines. At boot camp he was a typical “young guy...vulnerable and susceptible to being manipulated. I demanded infantry, and my own fear was that the war was going to end before I got a chance to get over there and do the right thing. I lasted eight months before I took a bullet through the chest.”

Paralyzed, he spent a year in a dilapidated, overcrowded veteran’s hospital whose atmosphere was one of despair. Eight of his close friends from the spinal-cord-injury department committed suicide. Muller decided to fight the system and became a lawyer, only to realize that to improve the lot of Vietnam vets would take new laws. The congressmen he could interest were too young to have any power, so Muller “went grassroots,” putting pressure on the system to get needed programs online.

In 1980, Muller helped establish the Vietnam Veterans of America Foundation (VVAFA), aimed at fostering reconciliation in war-torn societies and helping innocent victims of war. At its VVAFA clinics and rehab centers for landmine survivors in Cambodia, the victims were “typically women collecting firewood and kids playing or bringing animals out to graze. We went through a process of emotionally connecting with

an issue that we intellectually understood was devastating,” said Muller, who, with his friends in the VVAF, decided to tackle the politics of the landmine issue.

In 1992, the VVAF and the German group Midico International formed the International Committee to Ban Landmines (ICBL), and hired Jody Williams to direct it.

JODY WILLIAMS

As author Cobban notes, “Williams was ready for the challenge. She brought to the campaign her own network of contacts, her commitment and other talents as an organizer, and a seemingly boundless fund of personal energy.” Her key strategy was to gather a network of NGOs, which has grown from its initial group of 40 NGOs at the first International Conference on Landmines in London to its present day total of over a thousand. In awarding the peace prize to the ICBL and Jody Williams, the Nobel committee noted the innovative means the ICBL used, an effort Williams described as “a new model of diplomacy in the post-cold-war world that threatens the status quo about how things are done...making smaller and mid-sized countries working together with civil society a potential new superpower.”

The ban-the-landmine effort as told by Muller and Williams is high drama, particularly the less publicized roles played by Senator Patrick Leahy and the Canadian government acting through foreign minister Lloyd Axworthy. Also enlightening were the dynamics behind the U.S. refusal to sign the current treaty when, ironically, seven years earlier, the U.S. was the first country to outlaw the

traffic in antipersonnel landmines, and a year later, the U.S. Senate voted 100 to 0 to extend the ban for three more years. In addition, of course, there is the sobering reality of the daily killing and mutilation caused by the landmines still in the ground world-wide, which ICBL estimates may be as high as 90,000,000.

A theme reiterated by all the laureates was the importance of hope and the power of actively envisioning the kind of world you want to build. Cobban quotes the Dalai Lama: “If we lose hope, and remain with pessimism, that is the greatest of failures,” and concludes with a plea for everyone to “imagine her-himself as a capable actor, not just a powerless victim of the violence and inequity all around.”

Author Helena Cobban has written four books on war and peace issues in the Middle East, sits on an advisory committee for Human Rights Watch, and is a member of the International Institute of Strategic Studies. She writes a regular column on global affairs for the Christian Science Monitor.



The Tipping Point: How Little Things Can Make a Big Difference

**Book Review by
John L. Bennett**

Malcolm Gladwell’s “tipping point” is the point at which a phenomenon such as

an epidemic, an emerging fad, or an idea, reaches a moment of dramatic change. For example, when water reaches a certain temperature, it turns to ice. When the number of people with AIDS reached a certain point, it became an epidemic. When an advertising campaign convinced enough teens to buy a pair of Airwalk shoes, it became a sales bonanza.

The author, a journalist well known for his *New Yorker* articles, explores why it is that some ideas or behaviors start epidemics and others do not, and what we can do to deliberately start and control positive “epidemics” of our own.

Gladwell identifies three movers in reaching a tipping point:

MAVENS – the experts who accumulate knowledge, and influence a process by knowing what’s important and what’s current and are willing to share what they know.

CONNECTORS – those with a rare set of social gifts who know a lot of people in many different categories to whom they can pass information along.

SALESMEN – people with personality, charm, enthusiasm, and likability whose recognizable but undefinable skills engage us and put us at ease, creating an emotional contagion that persuades us.

Gladwell also uses the following terms:

STICKINESS – a brand name, idea, or message that, whether we like it or not, becomes part of our life. Today we are so overwhelmed by the clutter of advertising that it is a creative art to

design something so “sticky” that we listen, remember, and act on it.

CONTEXT – rather than being people with fixed and stable attributes, we are actually very sensitive to the immediate context. Thus we tend to overestimate the influence of our supposedly stable character and habits, and underestimate the influence of a situation.

In his book, Gladwell mixes the three types of people with the concepts of stickiness and context to present, in an engaging and integrated way, examples of tipping point situations.

- To reduce the spread of AIDS in Baltimore, the city sent out a van stocked with clean needles for free exchange on certain street corners at various times during the week. The workers observed after a time that, among the regular “customers,” a small number of addicts arrived with bags containing hundreds of needles for exchange. Researchers found that these “super-exchangers” went back to the streets and sold the needles for \$1 when and where the other addicts needed them—a “24/7” kind of service. A first reaction was that taxpayers should not be financing the habits of addicts. On second thought, it was recognized that the super-exchangers were on the spot when needles were about to be used.

By distributing connector’s information about health issues as they picked up their needles, these connectors became trusted sources of information in their community (served as mavens and salesmen) and furthered the program of AIDS reduction in a way that the city would never be able to do without them.

- During the '90s, murders in New York City dropped from 2000 per year to 1000; felonies dropped from 600,000 to 300,00. People had official explanations: Police said their strategy improved, economists said the economy improved (but it did not in NYC), and criminologists said the crack trade declined (it did, but maybe not for the reasons that they thought). Gladwell suggests that such seemingly minor activities as a concerted and sustained removal of graffiti from the subways as soon as it appeared, and a determined program to stop subway fare-beating, played a major role in creating a new environmental context. Criminals and ordinary citizens are remarkably sensitive to small contextual details such as broken windows and graffiti as signals of disorder in their environment. A mass of quality-of-life crimes serve as tipping points for violent crimes by sending a message “no one cares.”

This is a radical theory in the sense that it goes to the root of a problem—but it does not reflect conventional thinking about the problem that assumes that large-scale, city-wide, expensive programs are required. The change in crime rates seems to be associated, at least in part, with the action taken by the subway executives to break a pattern of environmental destruction. Gladwell offers this as a demonstration of the power of context, of how making relatively small changes can make a big difference.

- Georgia Sadler started a campaign to make women in the black community aware of what could be done to prevent diabetes and breast cancer. She started with seminars after church services, but

this was not a context that worked. Her inspired solution was to enlist hair stylists at beauty salons. Women having their hair done are captive audiences, requiring personal attention for several hours. Women and hair stylists tend to develop special, long-term relationships, and stylists are natural conversationalists. Sadler trained stylists to understand the information they needed, enlisted a folklorist to build on traditional ways of communication, and made sure that the stylists had a constant flow of new information and gossip to keep interest up. She prepared laminated sheets that survived in the busy salons. She then set up an evaluation program to see if attitudes changed and if the number of mammograms and diabetes tests increased as a result of the campaign.

This case study shows what can happen when you recognize (implicitly in this case) the role of mavens, connectors, and salesmen in bringing about social change in a community.

These are only three examples of the stories the author includes to illustrate his main point that using small funds intelligently and insightfully can result in achieving big effects.

I read this book from a perspective of practical action, asking: What might we learn from Gladwell that could help influence the cultural changes required to move towards a sustainable world, at least a world where human activities are not destructive to life and the environment?

I found his concepts helpful.

John Bennett is a consultant on

teamwork and partnership in human-computer interaction. He volunteers with the Foundation for Global Community via the Internet from San José, CA.

applied in public relations and advertising today.)



BUYER BEWARE — the admonition becomes more and more urgent as the stakes rise for consumers. Available information is not always valid.

CASE IN POINT: The July/August issue of Timeline carried an article on genetically modified food products, including a list of companies that do not use genetically-modified ingredients. Research for the article turned up a number of sources citing Frito-Lay Corporation as one of these companies. But checking the facts caused us to remove Frito-Lay from the list at the last minute when, after several requests, they sent us a copy of the following “Media Statement”:

“At the end of every year Frito-Lay advises its contract farmers which varieties of corn and potatoes to plant. In late 1999, we believed it was sensible not to ask our farmers to provide genetically modified varieties due to increasing questions from our consumers.”

This convoluted statement implies that Frito-Lay is rejecting genetically-modified ingredients. In fact, that is not the case, but the statement was apparently confusing enough to mislead several reporters.

(See the November/December 1999 issue of Timeline for an article about the science of manipulation and obfuscation frequently

Achieving Freedom from the Distortions of the Anti-Tax Lobby

By Donella Meadows

I’m not sure how or when our political arena became so infested with dubious “facts.” However it happened, we ordinary citizens don’t have time to separate the truth from the barrage of falsehoods. So I am grateful for public-interest research groups that watch the numbers for us.

One of the best is Citizens for Tax Justice (www.ctj.org). In the midst of confusing rhetoric about unfair taxes, flat taxes, tax surpluses, tax cuts, I turn to CTJ for tax facts.

It put out an interesting sheet about “tax freedom day.” That’s the symbolic date, we are told by those who foment discontent about our burdensome taxes, before which we all “work for Washington,” after which we get to “keep our money for ourselves.” They give the impression that that day occurs sometime in April, creeping toward May. Soon, they imply, we’ll be vassals of the government for half the year.

One problem with that claim is that the government is not some alien force separate from us; we do live in a democracy. Another problem is the

implication that tax money goes down some rat hole, instead of paying for things we want and use, such as highways, national parks, toxic waste cleanups, disaster relief, Medicare, or that defense contract that creates jobs in our district.

(OK, since we're on a truth-sorting mission here, let's admit that some tax money does go down rat holes, and that our democratic representatives don't listen to us nearly as much as they listen to folks who give big campaign donations. I always wonder why the anti-tax folks don't fix those faults in our democracy, instead of obsessing about tax cuts.)

If, starting Jan.1, you had to pay the government every penny you earn, until all your federal income tax was paid for that year, guess what day that would be.

CTJ shows that the answer depends on your income. If you earn less than \$13,600, you're in the lowest fifth of income earners, and you're free on Jan. 1. You pay no income tax. You do owe Social Security, Medicare, cigarette, gasoline, and other federal taxes, which you will pay off (on average \$756, 8.8 percent of your income) by February 1.

If you're in the next fifth up (between \$13,600 to \$24,400), your income tax freedom day is Jan. 4. Your total federal taxes are paid by Feb. 24. On average you are dunned \$2,854, 15 percent of your income. Nearly all of that is for Social Security and Medicare.

If you're in the literal middle class, the middle fifth of taxpayers, you earn between \$24,400 and \$39,300 per year.

Your income tax freedom day is Jan. 21; your total federal tax freedom day is March 13. You pay on average \$6,195 in federal taxes, about 20 percent of your pre-tax income. Just over half of it goes for Social Security and Medicare.

At this point we've covered 60 percent of taxpayers, and income tax freedom day hasn't yet extended into February. It does so for the earners in the fourth fifth (\$39,300 to \$64,900). They would pay their total income tax by February 3, their total federal tax by March 27. They pay on average \$12,047, about one dollar out of every four they earn.

So for 80 percent of us, income tax freedom day comes no later than early February. Most of our federal tax goes to Social Security and Medicare, a category the virulent cutters never talk about cutting. Of course the bottom 80 percent is not the group they worry about. They are focused on, they themselves are part of, and they are funded by those who are in the top 20 percent.

CTJ splits this top one-fifth apart, because it covers such a wide range of incomes. For the next 15 percent up the ladder (incomes between \$64,900 and \$130,000) income tax freedom day comes on Feb. 16; total federal freedom day on April 8.

It's only the top 1 percent (income of more than \$319,000) that have an income tax freedom day as late as March 30 and a total freedom day that reaches into May. These privileged households, average income \$915,000, pay on average \$339,000 in federal taxes. This top 1 percent earns 18 percent of all the

income in the country, and pays 25 percent of all federal taxes.

What we have, in short, is slightly progressive taxation, somewhat higher for the rich than for the poor. It is based on the classic economic principle of diminishing marginal utility. You spend the first dollars you earn on items of highest utility—necessities. Being rational, as you earn more, you spend down your priority list, most important things first, least important last. It makes sense and it maximizes national utility to finance public goods more from the low-utility dollars of the rich than from the high-utility dollars of the poor.

Maybe the loud tax-cutters honestly don't know the facts. Maybe they purposely distort the facts to keep us from noticing that every cut they advocate undermines progressivity. Whatever the case, 80 percent of us have no earthly reason to pay attention to them, and the remaining 20 percent, if they see how they benefit from living in a society with educated children, research and development, law and order, and other public necessities, shouldn't pay any attention to them either.

Donella H. Meadows, a systems analyst, author, director of the Sustainability Institute, and adjunct professor of environmental studies at Dartmouth College, writes a syndicated article each week to "present a global view, a connected view, a long-term view, an environmental and compassionate view." Meadows can be reached at Sustainability Institute, Box 174, Hartland Four Corners, VT 05049.

The Big Stick Approach

**Article by Joel Bleifuss,
excerpted from *In These Times***

With little fanfare and scant notice in the U.S. media, Europe is fomenting an environmental revolution with a concept known as "extended producer responsibility."

In the near future, the European Union will hold any company that enters the European market responsible for the environmental impacts of its products, forcing manufacturers to change product design, the kinds of materials used in manufacturing, and how products are disposed.

Extended producer responsibility, or EPR, got its start in 1991 when Germany passed a law requiring manufacturers to take back and recycle all packaging materials, boxes, cans, and bottles. Within two years, 12,000 companies, many of them U.S.-based, were participating in an industry-funded recycling program, which shifted the costs of managing packaging waste from taxpayers to the waste producers. It was wildly successful. Holland soon followed suit, as did Sweden, France, Austria, Finland, Spain, Belgium, and Canada.

The beauty of EPR is that by putting the financial burden on companies for the environmental impacts of products throughout their life cycle, industry has a natural economic incentive to act in an environmentally responsible manner. When properly regulated, the market does work. Writing in *Beverage Industry* magazine, E. Gifford Stack of the National Soft Drink Association,



describes EPR as “a big stick approach....Because the stick delivers a pretty good financial whack,” he notes, “producers also have a financial incentive to design their products to make less waste.”

EPR has failed to take hold in the United States, in large part because the Clinton administration has done everything it can to block it. The President’s Council on Sustainable Development, established in 1993 to examine ways to encourage environmentally sustainable growth, held heated discussions about EPR. But in its proposed program the council’s industry-dominated task force substituted “product” for “producer.” Under the council’s scheme of “extended product responsibility,” as spelled out in its 1996 report, “Sustainable America: A New Consensus,” “manufacturers, suppliers, users, and disposers of products share responsibility for the environmental effects of products throughout their life cycle.” This entirely voluntary program will cost corporations nothing and achieve little.

Despite protests from the United States, the Organization for Economic Cooperation and Development (OECD), an association of the world’s most developed economies, is drawing up guidelines on how countries can best implement EPR. They see it as a “promising new public policy tool” that could “minimize waste by transferring substantial or complete financial (and physical) responsibilities to private enterprises for managing their products at the postconsumption phase.”

The U.S. sees it differently. At a December 1998 OECD conference on

EPR, Clare Lindsay, head of the Environmental Protection Agency’s extended product responsibility project, said the United States “stresses collaboration and partnerships over command and control....We have a different philosophy here,” she noted, “[which] acknowledges that producers play a central role in reducing the environmental impacts of their products, but recognizes that they can not always do this alone.” Elizabeth Cotsworth, acting director of EPA’s Office of Solid Waste, told a May 1999 conference on EPR: “We are not going to simply follow in the footsteps of Europe.”

Nonetheless, any American-based multinational that wishes to do business in the European Union must conform to its standards. Consequently, EPR in Europe is already forcing U.S. companies to assume environmental responsibility for their products. For instance, in February the European Union passed EPR regulations on vehicles, against the wishes of the world automakers. By 2006, vehicles sold in Europe must contain no heavy metals such as lead, mercury, or cadmium, and be manufactured from recyclable materials. In addition, automakers will be held responsible for final disposal of the car.

This is good news for the U.S. environment, says Charles Griffith of the Clean Car Campaign, a coalition operating out of the Ecology Center in Ann Arbor, Michigan. “Europe is driving this and Japan is following fairly closely on what Europe is doing,” he says. “Consequently, U.S. companies are basically gearing up to meet the European requirements. It will be hard to come up with separate designs for the

European and U.S. markets, so the U.S. automakers are going to seek to meet the European Union phaseouts across the board.”

Understanding that EPR threatens the corporate bottom line, the office of the U.S. Trade Representative has teamed up with U.S. business interests to attack Europe’s EPR regulations as unfair trade practices. The current battle focuses on E.U. plans to implement EPR regulations for all products that contain electrical circuits. The proposal, known as Waste from Electrical and Electronic Equipment (WEEE), would phase out the use of toxic metals (lead, cadmium, mercury) in the production of consumer items like refrigerators and desktop computers, require products to contain a certain percentage of recycled material, set design standards that would allow computer equipment to be more easily upgraded, and generally make the manufacturers of that equipment assume financial and legal responsibility for their products throughout their entire life cycle.

The Silicon Valley Toxics Coalition, which is spearheading support for WEEE in the United States through its Clean Computer Campaign, notes that computers are made from more than 1,000 materials, many of them highly toxic, including toxic gases, toxic metals, chlorinated and brominated substances, acids, plastics, and plastic additives. Mans Lonnroth of the Swedish environment ministry observes: “The developers of electronic products are introducing chemicals on a scale which is totally incompatible with the scant knowledge of their environmental or biological characteristics.” Yet 75

percent of all computers ever purchased in the United States are currently stored in people’s attics and basements, and by 2004, an estimated 315 million obsolete computers in the United States will end up in landfills or incinerators. Already, consumer electronic products account for about 40 percent of lead found in landfills, where it can leach and contaminate drinking and water supplies.

A number of trade associations, led by the American Electronics Association (whose members include Microsoft, IBM, Motorola, and Intel), and including the American Plastics Council, the International Cadmium Association, and the Lead Industries Association, are adamantly opposed to WEEE. They lobbied the Clinton administration for help, and the administration obliged. The State Department has instructed its embassies in E.U. capitals to “highlight U.S. concerns about the draft directives,” suggesting that U.S. diplomats explain that the cost of taking back and recycling electrical products could be “shared with municipalities and other actors.... We urge [the E.U.] to work with industry and other interested parties to devise a more efficient, less trade-restrictive approach to meet its goals.”

The European Union is unlikely to cave in to U.S. pressure to abandon EPR. It is more likely to follow the sentiments expressed by President Clinton in his March 15, 1999, address to a WTO symposium on trade and the environment: “We must do more to ensure that spirited economic competition among nations never becomes a race to the bottom. We should be leveling environmental protections up, not down.”



Fritjof Capra on the Coming Era of Ecoliteracy

Last October, the Collective Heritage Institute held its Tenth Bioneers Conference, a gathering of biological pioneers from diverse fields and cultures “who are providing pathways to a future environment of hope...an alternative scenario to the destruction depicted daily in the news...a revolution from the heart of nature.”

Among the many speakers were some whose words have also appeared in Timeline: Terry Tempest Williams, Paul Hawken, Bill McKibben, John and Nancy Jack Todd, Amory and Hunter Lovins, and David Korten. They were joined by more than 50 others who are not only talking about restoring the Earth, but doing something about it.

With permission from the Bioneers, we are reproducing here excerpts of a talk by Fritjof Capra, Ph.D., physicist and systems theorist, founding director of the Center for Ecoliteracy and the author of a number of bestsellers, including The Tao of Physics, The Turning Point, Uncommon Wisdom, and The Web of Life.

All of us here are aware that concern with the environment will no longer be one of many single issues in the next century. It will move to the center of the stage. It will become the context of everything else in our lives, our businesses, our politics. The great challenge of our time is to build and nurture sustainable communities—that is, social, cultural, and physical environments in which we can fulfill our

needs and aspirations without diminishing the chances of future generations.

Since its introduction in the early 1980s, the concept of sustainability has often been distorted, co-opted, and even trivialized by being used outside of its proper ecological context. So it’s worthwhile reflecting on what sustainability really means. What is sustained in a sustainable community is not economic growth or development or market share. What is sustained is the entire web of life on which we depend for our long-term survival.

In other words, a sustainable community is designed in such a way that its ways of life, its businesses, its technologies, its social institutions do not interfere with nature’s inherent ability to sustain life. And this is the crux of the matter. At the moment, our ways of life interfere with nature’s ability to sustain life. We must stop that interference and redesign our lives, our social institutions, and our technologies.

The first step in this endeavor naturally must be to become ecologically literate—to understand the principles of organization that ecosystems have developed over billions of years of evolution to sustain the web of life. In the next century this ecological literacy will be a critical skill for politicians, business leaders, and professionals in all spheres. It will be the most important part of education at all levels, from schools to colleges and universities to the continuing education and training of professionals.

At the Center for Ecoliteracy we concentrate on schools. Our mission is to foster the experience and understanding of nature in primary education. Being ecologically literate, or ecoliterate, in our view means understanding the basic principles of ecology and being able to embody them in daily life and in the lives of human communities.

When you study ecosystems in detail, you find out very soon that the basic principles of organization are the principles of organization of all living systems. The study of ecosystems leads naturally to the study of life as such, and therefore, the most appropriate theoretical framework for ecology is the theory of living systems. This theory is only now fully emerging, but it has its roots in several scientific fields that were developed during the first half of the century.

Organismic biology is one of them. Gestalt psychology is another. Ecology as a science was developed in the 1920s; General Systems Theory and Cybernetics came later in the 1940s. These are the roots, and in all those fields scientists explored living systems, which means integrated wholes whose properties cannot be reduced to those of smaller parts. Although we can distinguish parts in any living system, the nature of the whole is always different from the mere sum of its parts.

Systems Theory entails a new way of seeing the world and a new way of thinking, which is often called systems thinking, or systemic thinking. It means thinking in terms of context, relationships, patterns, and processes. Systems thinking is now at the very

forefront of science. But although this intellectual tradition is almost a hundred years old, it has still not taken hold in our mainstream culture. Why do people find systems thinking so difficult? I've concluded that there are two main reasons. One is that living systems are nonlinear. They're networks, while our whole scientific tradition is based on linear thinking—linear chains of cause and effect. When you do something that works, then more of the same will always be better. That's linear thinking. A healthy economy is one that shows strong economic growth, indefinite economic growth. Linear thinking.

Now, ecological thinking, or systems thinking, is very different from that. Ecosystems, like all living systems, are highly nonlinear. They don't maximize their variables, they optimize them. When something is good then more of the same will not necessarily be better because things go in cycles, not along straight lines.

The point is not to be efficient, but to be sustainable. It's quality that counts, not quantity. So one reason why we find systems thinking difficult as a culture is that our whole culture is geared toward linear thinking. The second reason is that we live in a materialist culture, both in terms of its values and its fundamental world view. For example, most biologists today would tell you that in order to really understand living organisms, you have to understand their molecules—their DNA, their proteins, their enzymes, their material structures. Systems Theory tells us that although the knowledge of the molecules is of course very important, the essence of life does not lie in the molecules. It lies in the patterns

and processes in which those molecules are involved. When you say a living system is a system that contains DNA—that would be a standard, conventional definition. But any piece of wood, any dead animal also contains DNA. DNA does not disappear with the death of an organism. It stays on for hundreds of thousands of years. In order to change the definition of life you would have to say a living system is a system that contains DNA and which is not dead. And of course that's not a definition, it's a tautology.

So the essence of life lies in the patterns and processes in which those molecules are involved. The basic patterns of life are configurations of relationships between biological processes. And these relationships and processes are nonmaterial. They involve matter, of course, but a relationship is something nonmaterial. A process is something nonmaterial. You can't take a photograph of the web of life because it is nonmaterial; it's a network of functional relationships.

When systems thinking is applied to the study of the earth household (which is the original meaning of the word ecology, from the Greek *oikos*—household), we discover that the principles of organization of ecosystems are the basic patterns of life. For example, we observe that an ecosystem generates no waste, one species' waste being another species' food. That matter cycles continually through the web of life. That the energy driving those ecological cycles flows from the sun. That diversity increases resilience. That life from its beginning more than three billion years ago did not take over the

planet by combat, but by networking, by cooperation, by partnership.

The main task in the next century will be to apply this ecological knowledge to the fundamental redesign of our technologies and social institutions so as to bridge the wide gap that now exists between human design and the ecologically sustainable systems of nature. Fortunately, this is already taking place. In recent years there has been a burst of optimism about the dramatic rise of ecologically oriented design practices, all of which are now well documented.

The best recent overall documentation, in my view, is the book *Natural Capitalism* by Paul Hawken and Amory and Hunter Lovins (*Timeline* January/February 2000). Design, in the broadest sense, consists in shaping flows of energy and materials for human purposes. Ecodesign is a design process in which our human purposes are carefully meshed with the larger patterns and flows of the natural world. In other words, the ecodesign principles reflect the principles of organization that nature has evolved to sustain the web of life.

As an example, the principle “waste equals food” means that all the products and materials manufactured by industry, as well as the wastes generated in the manufacturing process, must eventually provide nourishment for something new. So a sustainable business organization would be embedded in an ecology of organizations in which the waste of any one organization would be a resource for another.

Ecodesigners speak of two kinds of metabolisms, a biological metabolism

and a technical metabolism. Things that are part of the biological metabolism—agriculture, food systems, clothing, cosmetics—should not contain persistent toxic substances. Things that go into the technical metabolism—machines, physical structures—should be kept well apart from the biological metabolism.

Eventually, all products and materials and all wastes will either be biological or technical nutrients. Biological nutrients will be designed to return to the ecological cycles, to be literally consumed by microorganisms, insects, and so on. The technical nutrients will be designed to go back to technical cycles. This means that customers will not own the technical products, but the ownership will stay with the manufacturer. When I'm done with a machine that I bought, I give it back to the manufacturer because I'm not interested in owning a set of toxic chemicals or industrial materials. I want the service of the machine.

So we have a very interesting shift of the economy from a product-oriented economy to a service- and flow-oriented economy. And that mirrors exactly the shift from mechanistic thinking to systems thinking because mechanism thinks in terms of basic building blocks, constituent parts. A systems approach thinks in terms of relationships and processes. Service and flow are relationships and processes.

Today the obstacles that stand in the way of ecological sustainability are no longer conceptual, nor are they technical. The obstacles lie in the dominant values of our society and, in particular, in the dominant corporate values and choices that are determined to a large extent by

flows of information, power, and wealth in the global financial networks that shape societies today.

During the past three decades, the information technology revolution has given rise to a new type of global capitalism, a capitalism that is structured around networks of financial flows. Manuel Castels, a professor of sociology at Berkeley, has extensively analyzed and documented the emergence of this new form of global capitalism in a three-volume work that is titled *The Information Age—Economy, Society and Culture*. Because, he says, of the ability of financial capital to relentlessly scan the entire planet for investment opportunities and to shift within seconds—literally—from one investment to another, the profit margins are generally much higher in the financial markets than anywhere else and therefore, profits from all direct investments, from all sources, ultimately converge into this meta-network of financial flows.

The movements of this electronically operated global casino do not follow a market logic. The market is twisted, manipulated, and transformed by a combination of computer-enacted strategic maneuvers and unexpected turbulences caused by the complex interactions between capital flows in a highly nonlinear system. Information technology has played a decisive role in the rise of networking as a new form of organization of human activity. As you well know, this goes far beyond economics. In our network society, as Castels calls it, the core processes of knowledge generation, economic productivity, political and military power, and media communication have been

deeply transformed by information technology and are connected to global networks of wealth and power.

The dominant social functions and processes are increasingly organized around networks. Presence or absence in the network is a critical source of power. So far the impact of this new network society on human well-being has been mostly negative. In the global networks of financial flows, money is almost entirely independent of production and services. And therefore, labor has become fragmented in its organization and divided in its collective action. Consequently, the rise of global capitalism is intertwined with rising social inequality, polarization, and social exclusion.

Not surprisingly, there has been resistance rising against this global capitalism. And the resistance is taking the form of a new politics of identity, which, according to Castels, represents the distinctive social and political trend of the 1990s. Social action and politics are being constructed around primary identities “either rooted in history or geography, or newly built in an anxious search for meaning and for spirituality.” So there’s a search for new connectedness around shared, reconstructed identity.

The most powerful shifts of identity have been initiated by the feminist movement and the environmental movement, the former involving a redefinition of gender relationships, and the latter a redefinition of the relationships between humans and nature. Castels also notes that much of the success of the environmental movement comes from the fact that more

than any other social force it has been able to best adapt to the conditions of communication and mobilization in the new technological paradigm. On the one hand, the movement relies on grassroots organizations, that is, on living human networks. And on the other hand it has been on the leading edge of new communication technologies, that is, electronic networks, as organizing and mobilizing tools. So we see that the environmental movement has created a unique link between electronic and ecological networks.

At the close of this century, then, we can observe two developments that will have major impacts on the well-being and ways of life of humanity in the next century. Both of these developments have to do with networks, and both involve radically new technologies. One development is the rise of global capitalism and the network society. The other is the creation of sustainable communities involving ecoliteracy and ecodesign practices. These two scenarios are currently on a collision course.

Ecoliteracy and ecodesign are concerned with ecological networks of energy and material flows to maximize the sustainability of the web of life. The global economy is concerned with maximizing the wealth and power of the elites in the network society. It is based on the central value of capitalism: money-making for the sake of making money, at the exclusion of other values. It is destructive of local communities and thus inherently unsustainable.

However, human values can change. They are not natural laws. The same electronic networks of financial and

informational flows could have other values built into them. The challenge of the 21st century will be to change the value system of the network society so as to make it compatible with the demands of ecological sustainability.

The website for the Center for Ecoliteracy: www.ecoliteracy.org

The 2000 Bioneers Conference will be held October 20-22. Contact: Collective Heritage Institute toll-free at 1-877-BIONEER; website: www.bioneers.org



The Gypsy Moth and the Tick . . . The Eagle and the Otter . . .

Editorial by Warren Flint

In the previous article, Fritjof Capra emphasizes that living systems must be studied in their entirety, not simply as isolated parts. In this editorial from the Sustainability Review, Warren Flint gives concrete examples of a sustainable lifestyle, considering the following three basic assumptions:

1. Everything, including humans and nonhumans, is interconnected, interdependent, and interactive;
2. The whole is greater than the sum of its parts; and
3. Nature determines the limitations of human endeavors.

Global climate change should remind us that people, the economy, and the environment are perplexingly linked. No human desires can be fulfilled without some connection to the environment. A common human notion, however, is that nature is assembled like a machine, acts like a machine, and thus can be treated like a machine made up of parts not necessarily related or interconnected. The end result of such a mechanistic approach most often comes down to misunderstanding interactions in the environment and then miscalculation in efforts to protect against or remedy environmental damage.

Kelp Forests, Sea Lions & Killer Whales

Consider the intriguing, complex story of declining kelp forests that one way or another feed a range of species from barnacles to bald eagles in the Alaskan coastal Pacific Ocean (Estes, et al., 1998, *Science* 282: 473-476). The disappearance of massive kelp beds caused governments and conservationists to hypothesize that pollution and other man-made disturbances were culprits. It turned out not to be that simple. In recent years, diminishing food supply has caused Pacific sea lion and seal populations to decline. They are a preferred prey of killer whales, but as their numbers decreased, whales began preying on sea otters that live in the giant kelp forests along the Pacific coast. The sea otters prey on sea urchins, which in turn are a major consumer of kelp. As a consequence of the whales switching to sea otters for food, otter populations decreased and their feeding was no longer able to keep the urchin population in check. Now the kelp have been overgrazed by the urchins to the degree

that the massive underwater forests are disappearing.

Caterpillars, Tree Farms & AIDS

In another example described by Chris Maser in his book, *Sustainable Community Development: Principles and Concepts* (1997), the day-flying moth *Urania flugens*, found in Mexico and South America, metamorphoses from a caterpillar that feeds exclusively on a particular variety of trees and vines known as *Omphalea*. The heavy defoliation caused by the feeding of the caterpillars causes the plants to produce a protective chemical toxin unpalatable to the moths. This plant-produced toxic compound has been found to be effective against the AIDS virus in test-tube experiments. But there is a problem. The toxin is produced only when a plant interacts with a large population of caterpillars. The timber industry, in cutting down much of the forest, simplifies the structure of the forest, essentially converting it into a tree farm and minimizing the capacity of the moth to reproduce. Such simplification removes interactive, interconnected, interdependent functions on which long-term stability and adaptability depend.

Acorns, Mice & Gypsy Moths

A team of researchers studied connections among white-footed mice, ticks, gypsy moths, deer, and Lyme disease (Jones, et al, 1998, *Science* 279: 1023-25). They found that in upstate New York forests in years when there was an overabundance of acorns, there were also booms in the mice population because they eat acorns. Mice also eat

the gypsy moth larvae found in tree nests. When acorns were abundant, the mice were abundant and kept the gypsy moth populations in check, eliminating their threat to eastern U.S. forests. But white-footed mice carry in their blood the Lyme disease spirochete which they transmit to tick larvae from the forest floor. When there is an over-abundance of acorn production, tick-bearing deer are also attracted. The adult ticks on the deer that gather in larger than usual numbers spawn more larval offspring which infest more mice, and thus more ticks pick up the Lyme disease vector. So while the damage of the gypsy moth is being kept in check by one series of ecological mechanisms (mice feeding), the dreaded Lyme disease has the potential to proliferate.

Shearwaters, Climate Change & Overfishing

Scientists have labored to untangle the web of life in the Bering Sea, a major marine system providing food for many humans. Some strange, new kinks have them wondering just what the web ought to look like (Saar, 2000, *Science* 287: 1388). A sea bird, the Short-tailed Shearwater, migrates every year from Australia to the Bering Sea, its prime feeding grounds. In recent years, Shearwaters by the hundreds of thousands have been found dead. The link between climate change and the Bering Sea ecosystem is especially strong. Ice limits the growth of small aquatic plants that feed the rest of the food web, and changes in wind dynamics have altered the patterns of ice cover and rate of ice melting in the spring. Nutrients from deep water nourish the

aquatic plants and allow them to produce enough food for all their consumers, such as small shrimp-like animals, but when the ice melts in spring and winds are not sufficient to mix deeper, nutrient rich waters with surface waters, the plants do not become abundant enough to feed the small shrimp-like animals. The food web shifts as the shrimp disappear. The shrimp happen to be the preferred food of the Shearwater, and what at first looked like a toxin or predator problem now is revealed to be a far more complex food supply problem. The highly productive fishery area of the Bering Sea, which supports many international economies, is being assaulted from both top and bottom. Fishing and hunting are taking out marine life, while climate changes are reshaping the community of tiny marine plants and animals that sustain life-forms higher in the food chain.

The examples of interconnections just keep appearing! Nature and people are endlessly and inescapably under the influence of one another through connecting relationships. Working within the framework of these interconnections is the essence of sustainability. People wanting to achieve a sustainable lifestyle must rely on the most informed understanding possible of the environment around them, commitment and love of home place, and the identification of long-term economic interests—needs, not wants—for establishing workable limits within nature's way. Establishing limits and understanding the effectiveness of these limits constitutes the true practice of sustainable lifestyle.

Editorial reprinted from *Sustainability Review Five E's Unlimited*,

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The World's Population

If we can shrink the world's population to a village of only 100 people, keeping all existing ratios the same, that village would look like this: There would be 57 Asians, 21 Europeans, 14 from the Western Hemisphere—north and south—and 8 Africans; 52 would be female; 70 would be nonwhite and 30 white; 70 would be non-Christian and 30 would be Christian.

Six of the 100 people would own 59 percent of all the wealth in the world, and all 6 of those people would be from the United States. Eighty of the 100 people would live in substandard housing. Seventy would be unable to read and write. Fifty would suffer from malnutrition. One would have a college education.

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TIMELINE (ISSN 1061-2734) is published
bimonthly by the Foundation for Global
Community 222 High Street
Palo Alto, CA 94301-1097

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A print edition of *Timeline* with photographs and artwork is available for a subscription price of \$10 per year (six issues). This is pretty much what it costs us to produce and mail *Timeline* since our writers are all volunteers and we have no editorial expenses. But we do have overhead costs for our building, computers, etc. So if you feel *Timeline* and the other work our Foundation does are valuable and you want to help keep us going, please consider making a tax-free donation to Foundation for Global Community. Be sure to indicate that it is for *Timeline E-mail Edition* -- otherwise our subscription people will automatically send you the printed edition, and the whole idea of saving natural resources is down the tubes. Thanks!

Palo Alto, California
September 26, 2000