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[Al Gore - Environmental Activities] [2]

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GORE: ENVIRONMENTAL LEGISLATION**

Clean Air Act Amendments of 1990

Gore amendments passed by the Senate and enacted into law:

- o To stop ozone depletion by requiring the phase-out of the production and use of ozone-depleting hydrochlorofluorocarbons (HCFCs).

- o Prohibiting the export of CFC-producing technologies to countries that are not party to the Montreal Protocol, an international agreement setting phase-out deadlines for ozone-depleting chemicals.

- o Forcing polluters to reduce pollution instead of destroying neighborhoods by creating polluted "dead zones" around their plants.

- o Including carbon dioxide emissions in studies of highway pollution so that we don't just build bigger highways to deal with emission problems but instead move to reduce pollution.

- o Requiring federal procuring agencies to procure safe substitutes for ozone-depleting substances.

Strategic Environmental Research and Development Program:

Adopted in 1990 as part of the Department of Defense Authorization bill for Fiscal 1991, the SERDP brings the capabilities of the Defense Department to global environmental problems.

Also initiated efforts that led to work with CIA Director Robert Gates to make available to civilian environmental scientists previously classified scientific data about the earth that is critical to the research efforts of these scientists.

Energy:

Gore amendments enacted by the Senate as part of the 1992 energy bill:

(NOTE ALSO: Gore was a leader in the successful efforts to kill provisions that would have allowed drilling in the Arctic National Wildlife Refuge.)

- o The Gore Resolution (S. Res. 95) calling for an accelerated phaseout of ozone-destroying chemicals pursuant to the Clean Air Act amendments of 1991; the Resolution passed 96-0 in March, 1992, after being filibustered by Republicans at the end of the previous session. NOTE: The Clean Air Act amendments required the Administration to speed up the phase-out of ozone depleting chemicals if new scientific evidence demonstrated that the ozone depletion problem had gotten

worse since passage of those amendments. Despite new scientific evidence, the Administration did not act until after Gore's amendment was passed.

- o To help small businesses increase their energy efficiency and cut their energy bills by establishing energy diagnostic centers where engineering students and their professors can work with small businesses.

- o To accelerate the government's efforts to procure the most energy efficient products and to provide grant money to states to fund energy efficiency and conservation initiatives

- o Requiring the Tennessee Valley Authority of conduct least-cost planning analyses of energy supply and demand requirements (with Sen. Wirth)

Antarctica Protection:

- o Author of Public Law 101-620, a resolution calling for the protection of Antarctica from mining and development and declaring the area a global ecological commons.

- o Co-sponsor of Resolution adopted by the Senate in 1991 to ban mining in Antarctica; led to Administration's adoption of current policy to ban mining in Antarctica.

Interior Bill 1991

- o Led efforts, with Sen. Wyche Fowler, to eliminate below-cost timber sales and forest road subsidies.

- o Led efforts to retain funding for research and development joint venture funds for solar and other renewable forms of energy.

General

- o Sponsor of legislation enacted prohibiting "backhauling", a practice in which trucks carrying hazardous material in one direction are loaded with food products for return trip, often with inadequate cleanup from hazardous load.

- o As a member of the the House of Representatives, chaired hearings that revealed illegal dumping of billions of pounds of hazardous chemical waste and co-sponsored the original Superfund Act which resulted from those hearings.

- o Sponsor of resolution declaring April 22, 1990 as Earth Day, marking the 20th anniversary of the first Earth Day.

o Co-sponsored legislation, now law, providing a method of locating private and government research on environmental issues by geographic location, The Environmental Research Geographic Location Information Act.

o Held hearings and led effort, with Rep. Marilyn Lloyd of Chattanooga, to establish TIGER TEAMS to investigate environmental contamination and human health and safety concerns due to radioactive and toxic waste produced at national labs and weapons facilities.

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** NOTE: This includes ONLY legislation passed. It does not include legislation introduced by Sen. Gore or, Sen. Gore's other activities and accomplishments on these issues.

Boston Sunday Globe

SUNDAY, DECEMBER 13, 1992

THE BOSTON SUNDAY GLOBE • DECEMBER 13, 1992

Gore playing key role in shaping transition

Senator's influence seen in policy and personnel choices

By Adam Portman
GLOBE STAFF

WASHINGTON — There have been few public sightings of Vice President-elect Al Gore since Election Day. And, when he has appeared, he's been standing silently at press conferences in Little Rock, Ark., looking every bit the traditional running mate whose primary purpose — helping his party win — has already been served.

In this case, though, the reality belies the image.

According to senior Democratic officials in Washington and Arkansas, Gore has been playing an unprecedented role during Bill Clinton's transition to power. The officials said Gore has not only been helping shape policy but also has exerted considerable influence in the selection of top-level administration nominees.

"I think it's fair to say that Al

Gore has had an impact on every Cabinet appointment ... even if it is in a modest form," said Roy M. Neel, the Tennessee senator's chief of staff.

Bruce Reed, one of Clinton's principal domestic advisers, made the same point in a separate interview in Washington. He said Clinton sought Gore's advice on a wide range of personnel and policy questions, particularly relating to foreign affairs and the environment.

Transition officials acknowledged that portraying Gore as a key player serves Clinton well. It sends a signal that the new White House will remain true to the issues Gore has championed, they said, and demonstrates that Clinton will live up to his vow to give his No. 2 unprecedented responsibilities.

At the same time, the officials insisted that there is nothing cosmetic or temporary about Gore's influence. The two running mates developed an

unusually close rapport during the fall campaign, they said, and Clinton seems intent on maintaining it after taking office next month.

"Skeptics beware, history teaches you nothing on this count," said a senior Clinton aide in Little Rock, referring to vice presidents being relegated to attending funerals or given some specific limited responsibilities.

"Besides," the aide added, "all you have to do is look at how much

*President-elect
Bill Clinton and
Al Gore 'developed
this intense
trusting
relationship on
the campaign
trail and it's
evident every day
now.'*

BRUCE REED
Clinton aide

clout Al has exercised already to understand that this is really, really different."

The clearest example of Gore's sway thus far was last week's selection of Carol Browner as administrator of the Environmental Protection Agency. Browner was a top aide in Gore's Senate office before assuming her current post as Florida's environmental enforcement chief.

Sources said that, when the initial list of prospects for the EPA job was drawn up, Browner was not even on it, but was added at her former boss' suggestion. The sources stressed that Browner rose to the top of most transition officials' lists on her own merit, and that Gore was careful not to disparage the other candidates -- including former Vermont Gov. Madeleine Kunin, who most observers thought would win the EPA post.

Still, Gore got his first choice when Clinton made his final cut.

Gore also cast his shadow, albeit more faintly, during last week's discussions on nominations for key Clinton administration economic posts.

Lawrence Summers, a highly regarded Harvard economist, had been considered a top candidate for the new post of Economic Security Adviser. But, when he was chief economist at the World Bank, Summers had written a memo in which he raised the prospect of disposing of toxic waste in developing nations.

Summers has since said he was merely offering an option, not an opinion, but Gore is known to have become wary of the economist as a result. While Gore reportedly did not try to undermine Summers' prospects for the security adviser's job, the senator's allies made their displeasure known to Clinton, and the position went to investment

banker Robert Rubin.

Besides the environment, on which Gore is considered one of the nation's authorities, officials interviewed last week said they expected his recommendations to be given particular weight in the areas of foreign policy, technology and communications. That presumably includes policy and personnel decisions affecting such pivotal Cabinet departments as state and defense, and such

powerful agencies as the Federal Communications Commission and the Federal Trade Commission.

Already, Democratic officials said, Gore has influenced public statements made by Clinton on such international issues as US involvement in Bosnia and Somalia. And, they said, his recommendations have been incorporated into the new administration's ethics guidelines and still-developing government-reorganization blueprints.

"Clinton has relied on him heavily on both people-related matters

and in areas of the federal government where Clinton has less experience," said Neel.

He pointed out that Gore is one of a handful of close Clinton advisors who discusses final decisions in the governor's mansion in Little Rock every night.

"They developed this intense trusting relationship on the campaign trail and it's evident every day now," Reed, the domestic policy aide, said. "I think you can bet that won't change once they move into the White House."

ENVIRONMENT

Remaking society to save the planet

By Ross Gelbspan
GLOBE STAFF

Gore asks radical global fix

Like a freight train careening downhill out of control, the planet Earth seems to many scientists to be speeding toward environmental apocalypse.

Many despair of doing anything about it, but Sen. Al Gore (D-Tenn.), a 1988 presidential contender and a leader in the US Senate, has decided to throw his political future across the tracks.

He has done so in a new book that calls on Americans, and the world, to apply the brakes by embracing individual, societal and economic life-style changes that would seem sweeping and radical coming from the environmental establishment, let alone from the heart of the political mainstream.

Its call for restructuring modern civilization around the principle of global environmental redemption proposes strategies far more radical on Capitol Hill than anything publicly espoused by many environmental groups, concerned about their credibility in the hardball world of political compromise.

Gore's interest in environmental issues is nothing new. Last week, the Senate voted 96 to 0 to adopt his resolution to speed the phase-out of ozone-depleting chemicals. And colleagues expect him to vigor-

ously oppose an administration-sponsored energy bill that would create hundreds of oil, coal and nuclear power plants over the next four decades while doing little to promote conservation and renewable energy sources.

But those initiatives pale in the face of his global blueprint, which includes a "Global Marshall Plan" to stabilize skyrocketing population and halt deforestation and destructive agricultural practices in developing countries; to switch from oil, coal and nuclear energy to solar, wind and other renewables; impose stringent taxes on virgin materials to force producers to recycle and reuse products; and change the way national budgets are calculated to reflect the true costs of resource depletion

and pollution.

In "Earth in the Balance: Ecology and the Human Spirit," Gore makes the case for such steps by relentlessly cataloguing a list of accelerating planetary catastrophes - global warming, climate change, sea level rise, deforestation, skyrocketing population growth - that threaten the survival of civilization.

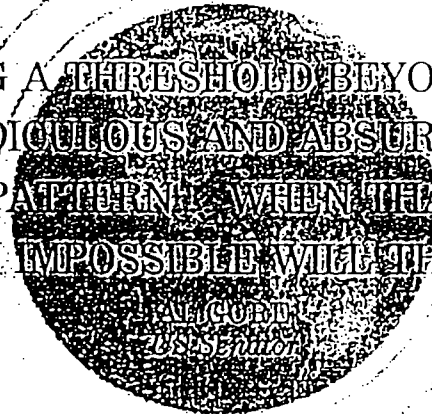
In a particularly impolitic chapter, Gore, the scion of one of Tennessee's leading Democratic families, warns Americans they are fundamentally alienated from nature and their own experience, a split that has led to what he calls a "dysfunctional civilization" marked by addictive con-

GORE, Page 33



SEN. AL GORE

'WE'RE NEARING A THRESHOLD BEYOND WHICH PEOPLE WILL REALIZE THAT THIS RIDICULOUS AND ABSURD FRENZY OF EXPLOITATION IS REALLY A DUMB PATTERN. WHEN THAT HAPPENS, THINGS THAT TODAY SEEM POLITICALLY IMPOSSIBLE WILL THEN BE POLITICALLY IMPERATIVE.'



Remaking society to save planet

■ GORE

Continued from Page 29

sumption of oil and natural resources and an escalating frenzy of empty and unfulfilling consumerism.

Although many of the ideas and data in Gore's book come from scientists and other environmental thinkers, some who have read it say it is so radical that Gore runs the risk of marginalizing his political career. "Maybe Gore feels his stage is outside the Senate and that's why he wrote a book like this," said a senior Senate staffer who asked not to be named.

But others believe that, rather than courting political disaster, Gore is speaking over the heads of a hostile Washington establishment to a more receptive public.

"Gore is doing a smart thing politically," said David Gardiner, the Washington-based legislative director of the Sierra Club. "His book is likely to be very well received by the public. The people who find his ideas scary are the lobbyists who don't want to make the changes we need to make."

"I think Gore's book is a signal of how mainstream the public's concern about the environmental crisis has become. The public is far ahead of most politicians on these issues," he added, citing a survey that found 80 percent of Americans would pay more for cars that achieved 45 miles per gallon of gas.

"Al Gore's prescription - which is bold enough to actually cure the patient - puts him several orders of magnitude beyond where Congress, the President or either political party is willing to go," said James Maddy, director of the Washington-based League of Conservation Voters. He contrasted Gore's boldness

with the caution of environmental leaders who feel that in the world of Washington politics they can win only marginal improvements, saying the senator is "willing to be candid and honest about the future of the planet, and tell people the shocking truth about what's really required."

Gore himself insists that his book is not politically motivated, but some critics on Capitol Hill, who asked not to be named, question his disclaimer. They note that while seeking the presidential nomination in 1988, Gore rode the environmental issue as hard as he could - until it became clear the Democratic selection would turn on other issues.

A personal rubicon

He dismisses the political tea-leaf reading, saying that three years ago he crossed a personal threshold in which political aspirations were overwhelmed by conscience. The issue, he said, is how to reconcile the need for radical remedies with the incremental change of the politically possible.

"I've tried to find the outer boundary of what is politically feasible within the framework we have," he said in an interview last week. "But I see social markers which are expanding that boundary. People object when their backyards are threatened by a new landfill or incinerator. But people's definition of backyard is changing. Each breath we take has 600 percent more chlorine than 40 years ago. The new intensity of storms due to climate changes will also affect backyards."

"When people make the connection between their own backyards and the devastation of global environment, you will see the same in-



1988 GLOBE STAFF PHOTO / SUZANNE KREITER

A large portion of forest in China, the world's largest, has been destroyed.

He expressed disdain for those who say the global danger is being exaggerated. He specifically challenged a small minority of scientists, actively supported by the Bush Administration, who deny there is a crisis because of scientific uncertainties about patterns of variation and specific causes and effects. Gore compared them to tobacco company scientists who cite the lack of proven specific pathways by which smoking causes cancer to deny the overwhelming evidence of such a link.

Just as the United States rebuilt Europe after World War II in a policy of enlightened self-interest, Gore's book urges the developed nations to embark on a "Global Marshall Plan" to eliminate the buildup of greenhouse gases by switching to renewable, non-polluting energy sources such as solar, wind and photovoltaic cells. It also calls for drastic reduction in the use of industrial chemicals and soil-depleting chemical-intensive agriculture. And it calls on the world to provide education, infant health care and contraceptives to women in poor countries to check population growth.

Factoring in hidden costs

Key to his plan is worldwide adoption of an economic budgeting system that includes the hidden costs of pollution and resource depletion in calculating the Gross National Product, an approach advocated by several economists who say the current system masks massive costs that then fall on future generations.

Gore, again echoing economists, says that by reducing pollution and increasing energy efficiency, firms actually increase competitiveness by finding ways to improve production, maximize the ingenuity of their workforces and cut waste.

Observers in Congress note that Gore has long had an environmental focus, focusing on toxic waste problems as a young congressman and helping establish the 42-nation Interparliamentary Conference on the Global Environment, an international group to monitor global climate change.

But, Gore says, it was a convergence of seismic personal changes, marked by deep frustration and pain, that prompted him to write his book. During his aborted 1988 presidential run, he recalled, he gave speech after speech about environmental problems "only to pick up the newspapers the next day and see not one reference to those speeches."

"I started to wonder whether those issues... were peripheral after all. I began to doubt my own political judgment, so I began to ask the pollsters... what they thought I ought to talk about," he wrote. As a result, "I discussed what everybody else discussed, which too often was a... list of what insiders agree are 'the issues'."

Then, in 1989, he says, he underwent a period of soul-searching after his six-year-old son was hit and nearly killed by a car. During the weeks he and his wife spent in the hospital caring for their child, Gore wrote, he realized "the change that sought me out in the middle of my life... gave me a new sense of urgency about those things I value the most."

A horrifying tableau

The result, "Earth in the Balance" (published by Houghton Mifflin), presents a horrifying tableau of accelerating, unrestrained destruction that threatens in the next few decades to stress the global environment to the breaking point.

It foresees massive climate change marked by wild increases in

droughts, flood and storms, propelled by a growing atmospheric overload of carbon dioxide and other "greenhouse gases." Those changes, accompanied by rising sea levels, are being accelerated by the ferocious destruction of forests that consume carbon dioxide and replenish our oxygen supply.

It also forecasts rapid wilting of the food supply under the pressure of wasteful and destructive agricultural practices.

And it suggests the inevitability of overpopulation coming to an abrupt halt in a massive population crash driven by drought, famine, deforestation or other causes.

Among other findings Gore cites to support his alarm:

- While the global average temperature dropped by slightly more than 1.8 degrees Fahrenheit during the Earth's last "little" ice age between 1550 and 1850, scientists expect it to increase 4.5 to 7.2 degrees over the next 50 years.

- Atmospheric concentrations of carbon dioxide have ranged from 200 to 300 parts per million during the last two ice ages, but is expected to skyrocket to 600 ppm in 50 years.

- The world's tropical rain forests, which consume carbon dioxide and provide homes to millions of species, are being destroyed at the rate of one football field per second, more than one Tennessee per year.

- Partly as a result, wildlife species are being destroyed a thousand times faster than at any time in history.

- Earth's population, which grew to 2 billion between the dawn of human history and 1945, will more than quadruple, to 9 billion, by 2020.

At the same time, Gore says, there has been a destruction of the

internal ecology of human feelings and responses by the numbing power of alienation and denial, which has deafened leaders and paralyzed many of the world's people.

On one level, he wrote, politicians, news editors and individuals who refuse to address the threat "are really saying they simply do not want to think about the disruption that would accompany any serious effort to confront the problem."

At a deeper level, the apathy is caused by "dysfunctional patterns of behavior" resulting from losing touch with humanity's natural roots.

"People object when their backyards are threatened by a new landfill or incinerator. But people's definition of backyard is changing."

SEN. AL GORE

Driven to consume

The source of the crisis lies in our "addiction to the consumption of the Earth itself," he wrote, an addiction that "distracts us from the pain of what we have lost: a direct experience of our connection to the... natural world..."

That addiction must be faced before it can be curbed, he asserts, for only then "can we recognize the destructive impact" of our habits. That is the first step, "toward mourning what we have lost, healing the damage we have done to the Earth and to our civilization, and coming to terms with... what it means to be a steward of the Earth."

ST. LOUIS POST-DISPATCH

TUESDAY, SEPTEMBER 1, 1992

EDITORIALS

Environmental Distortions

Among his targets for the fall re-election campaign, Vice President Dan Quayle has chosen "Earth In The Balance," the recent and now controversial book by his opposite number, Sen. Al Gore. Mr. Gore, the Democratic nominee for vice president, has written of the difficulties of sustaining life on this planet at the present rate of consumption, particularly in highly industrialized countries like the United States.

Here is how Mr. Quayle summed up the differences in the environmental philosophies of the Republican and Democratic parties. In a speech last week to the Economic Club of Grand Rapids, Mich., Mr. Quayle said: "We envision man as the harvester, working with the Earth to raise up homes and cities, respecting nature but shaping it to legitimate ends. . . . They [Democrats] view man more as an uninvited guest here on Earth, settling down and consuming resources to which he has no right."

What a gross oversimplification. The modern American environmental movement began with such Republicans as Theodore Roosevelt, who believed in setting aside precious resources like the national parks for future generations to enjoy. Many moderate Republicans who recoil at the existence of the likes of Dan Quayle in their party long have worked to protect and preserve the environment for one and all. Other Republicans have embraced the concept of conservation to save trees, minerals, wildlife and vegetation.

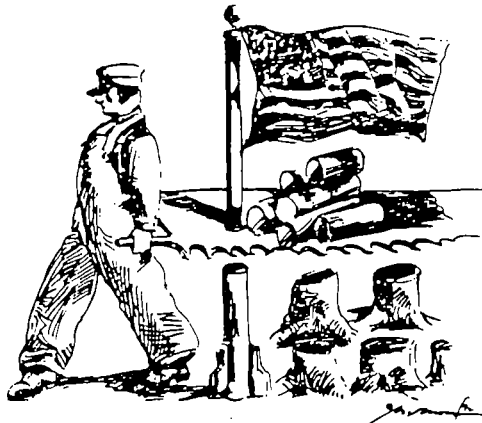
But those Republicans are not in control of the

party. Those in control now cast the issue as environmental protection versus jobs, though that is seldom the case. And too often they are willing to allow industry to pass on the cost of environmental degradation to the general public.

Conversely, Democrats across the board do not believe that human beings and economic development are incompatible. But many do believe that great care must be given when forests are felled and lands mined, lest permanent damage to the environment be done.

They believe, like moderate Republicans, that scarce resources should be husbanded, that wastes that come from economic inefficiencies are wastes that cannot be sustained. And they realize that small, thoughtful changes in living habits can sometimes result in great savings for society, whether that be by a fuel tax that encourages greater efficiency or by insulation standards that make homes cheaper to heat and cool.

Mr. Gore's views are neither new nor extreme, but he does argue that sometimes painful measures may have to be taken by government and individuals to curtail activities by human beings that are counterproductive in the long run. And part of the burden will fall on Americans, who consume more per capita in fuel, food and raw materials than any other nationality in the world, now or in the past. Mr. Gore's message is complex. Unfortunately, that makes it vulnerable to the cheap distortions of a Dan Quayle.



The Philadelphia Inquirer

Wednesday, September 16, 1992

Saving earth for and from mankind

By JAMES R. SPOTILA

Sen. Al Gore's *Earth in the Balance* is the most important book of the decade, not because it contains the answer, but because it focuses on the question. How do we face a global environmental crisis that threatens civilization as we know it?

If we continue our neglect of ecological issues, the end will not come with a bang, as in a nuclear war, but will arrive imperceptibly. Our grandchildren might not enjoy the clean air and water, the protective sky and changing seasons that we expect as our birthright.

Sen. Gore points out in accessible language that if we do not begin to address that growing environmental threat now, we may be able to accumulate short-term profits for a while, but our long-term legacy will be a world barren of nature due to a depleted ozone shield.

Gore exhorts us to change our ways of thinking and of doing business.

Since these conclusions have long been obvious to environmental scientists, it was with more than a little skepticism that I began to read Sen. Gore's book. To my surprise, I was compelled not only by his clear presentation of the data on global warming, ozone depletion and other environmental horror stories, but also by his proposed solution to the crisis — A Global Marshall Plan.

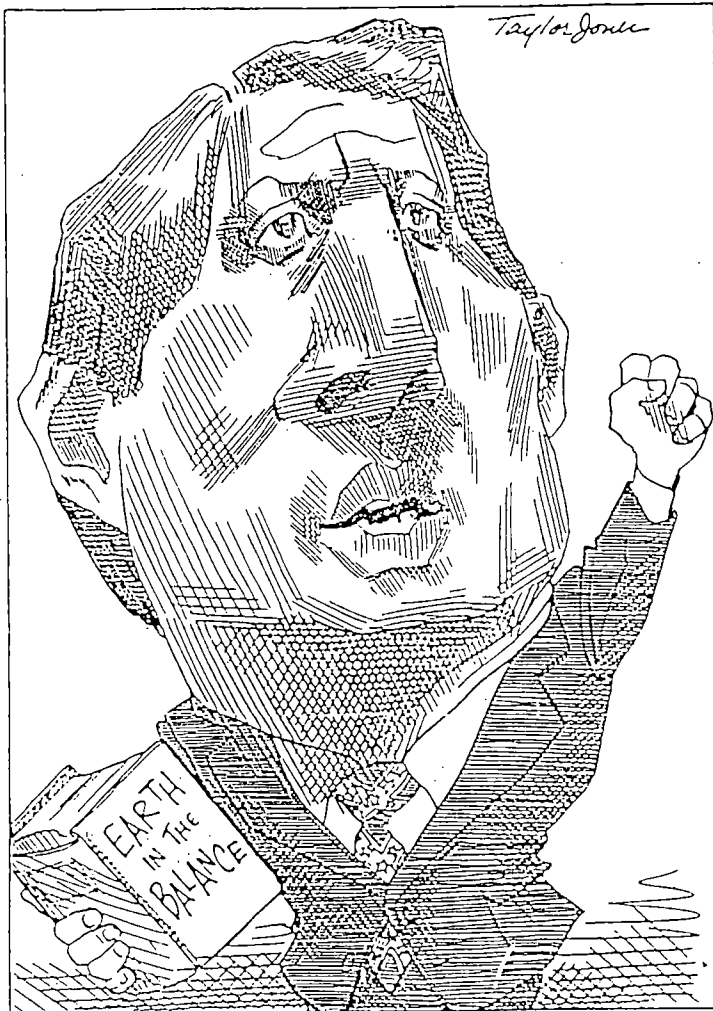
Gore calls for improved automobile technology — such as the Japanese ceramic engine that runs at higher temperatures and thus minimizes pollution — because our cars with their outdated engines pose "a mortal threat to the security of every nation that is more deadly than that of any military enemy we are ever again likely to confront."

He's right. A 2-to-5 degree Celsius rise in global temperature poses a greater danger to the U.S. than Iraq does.

There is nothing more important to our future than a safe and sustainable environment. Without it there is no economy and our civilization will fade into oblivion.

For America to maintain a viable environment, Sen. Gore advocates government planning like that used to build up our military strength during World War II and the Cold War.

Over the last 12 years our government has minimized our environmental crisis while maximizing short-term economic gains. The Reagan and Bush administrations have dismantled our environmental safeguards, cancelled ecological studies, and gutted the Environmental Protection Agency (EPA). Though the savings and loan bailout and budget deficit are on the national agenda, if we fail to take action on the environment, the costs of the "Environmental Debacle" will dwarf both of these problems.



ALBERT GORE

Los Angeles Times / TAYLOR JONES

Sen. Gore makes clear we must act to change our approach to the environment. Not to act now would be to bequeath our grandchildren a life so filled with disease and famine that they would look back and rue the selfish actions we are taking today.

Sen. Gore states, "We tolerate... the violation of the rights of those who will come after us. As we strip-mine the earth at a completely unsustainable rate, we are making it impossible for our children's children to have a standard of living even remotely similar to ours."

He also contends, "With the future so open to doubt, we routinely choose to indulge our own generation at the expense of all who will follow. We enshrine the self as the unit of ethical account, separate and distinct not just from the natural world but even from a sense of obligation to others — not just others in future generations, but increasingly even to others in the same generation; and not just those in distant lands, but increasingly even in our own."

How can we have a healthy economy if we do not have a healthy environment? One of the most prescient actions of late was America's passage clean water and air legislation during the 1960's and 1970's. We only have to compare our environment to that of eastern Europe to appreciate the horror we avoided and the high quality of life we obtained by those actions. Money invested in that effort paid for itself in jobs and quality of life a hundred times over.

The question is not, as Gore's critics would have it, which do you want, jobs or a clean environment? The question is, how do we create jobs that contribute to maintaining a sustainable and safe environment? Since 1970 many companies have grown, created jobs and prospered by combining concern for environmental quality with technological innovation.

The 3-M company improved profits with its Pollution Prevention Pays program. Xerox and Dow instituted similar measures. Here in the Delaware Valley, Betz Laboratories, Roy F. Weston, Inc. and Environmental Tectonics Corp. have grown to employ over 6,000 blue collar, technical and scientific workers. They have demonstrated that caring for the environment and creating jobs are compatible.

Gore sets six strategic goals for the Global Marshall Plan.

- Stabilizing the world population.
- Rapid creation and development of environmentally appropriate technologies.
- A comprehensive change in the economic "rules of the road" by which we measure the impact of our decisions on the environment.
- The negotiation and approval of a new generation of international agreements to make the overall plan a success.

■ The establishment of a cooperative plan for educating the world's citizens about our global environment.

■ The establishment, especially in the developing world, of the social and political conditions most conducive to the emergence of sustainable societies.

An environmental scientist could not have said it better.

After 12 years of undermining support of family centered programs, the Republicans are talking to us about family values. Don't they think family values also include ensuring that our grandchildren have clean air to breathe and clean water to drink?

If you care about your grandchildren, read Gore's book.

James R. Spotila is a professor of environmental science at Drexel University.

REVIEWS

BOOKS

A Crisis as Real as Rain

TITLE: *EARTH IN THE BALANCE*

AUTHOR: AL GORE

PUBLISHER: HOUGHTON MIFFLIN; 407

PAGES: \$22.95

THE BOTTOM LINE: *A work of intelligence and passionate authenticity.*

By LANCE MORROW

SENATOR AL GORE HAD JUST turned 40 years old. His presidential campaign had broken up in the primaries the previous spring. Then, as he reports, "one afternoon in April 1989, I walked out of a baseball stadium and saw my son, Albert, then six years old, get hit by a car, fly thirty feet through the air and scrape along the pavement another twenty feet

until he came to rest in a gutter." The child, at first near death, eventually recovered. It was in his son's hospital room in Baltimore that Gore began writing *Earth in the Balance*.

Since the book arises in part from a moment of personal crisis, it speaks with a certain passionate authenticity, a ring of the unfakable that is rare enough in the (usually ghostwritten) outpourings of politicians. The American public, much afflicted by sound bites, has all but abandoned hope for intelligent life in Washington. It may be impressed by Gore's sustained intellectual concentration and mastery of his subject, the environment. Gore has studied it a while. In the 1988 campaign, the Senator held the wedding guests with his glittering eye and talked about such obscurities as the greenhouse effect and the thinning ozone. Another candidate said he sounded as if he were running for national scientist.

The subjects are less obscure now. In *Earth in the Balance* Gore writes, "The global environmental crisis is, as we say in Tennessee, real as rain, and I cannot stand the thought of leaving my children with a degraded earth and a diminished future."

Gore has produced a labor of statesmanship, evangelism and scientific exposition. He does not so much break new ground as organize a wide variety of material and experience to state the case of environmental urgency and the need for change, for what he calls a "Global Marshall Plan." He has digested books, made friends with experts and traveled. Gore went, for example, to the Aral Sea in Central Asia—10 years ago the fourth largest inland sea in the world, now dead, its fishing fleets stranded surreally in dry desert. The water that once fed the Aral was diverted in an ill-considered irrigation project to grow cotton. Gore traveled to the vanishing Amazon

rain forest and to the globe's other environmental Stations of the Cross. He knows too much, however, to indulge in mere sentimentalism about Earth-Motherhood, or to join a doctrinaire rush to simplification.

In drawing a line connecting the individual to the global, Gore here and there sounds as if his inner Ancient Mariner had lingered too long in adult-children seminars with John Bradshaw, and humankind might 12-step the earth green again. Still, the vocabularies of the recovery movement open interesting windows upon a civilization that is dysfunctional, much given to denial, addiction, co-dependency and brutal nature abuse.

If the future (to use Gore-esque imagery) remains as dark as a mine shaft, humankind has at least begun to notice the alarming accumulation of dead canaries about its feet. In part because of his son's accident—and perhaps in part because of George Bush's overwhelming popularity in the polls after Desert Storm—Al Gore decided to sit out the 1992 campaign. Instead of Gore for President, the public has his book, which is itself an act of leadership. ■

TELEVISION

Graduating With Honors

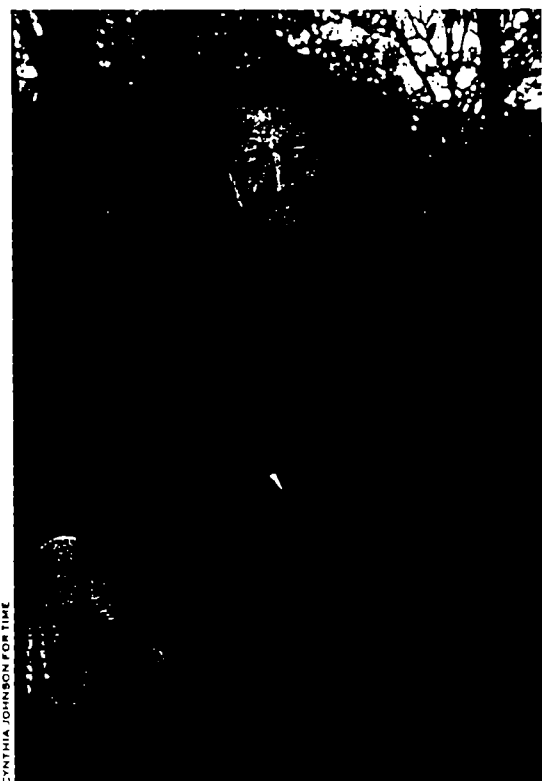
SHOW: *THE COSBY SHOW*

TIME: THURSDAY, APRIL 30, 8 P.M. EDT, NBC, FOR THE LAST TIME

THE BOTTOM LINE: *The most successful sitcom of the '80s makes a graceful exit.*

By RICHARD ZOGLIN

NOTHING ON TV AGES FASTER than a family show. The regulars at the *Cheers* bar or the *M*A*S*H* unit can stick around for years, with only occasional cast changes to accommodate stars who want to get into movies. But kids have a bad habit of growing up. Anyone tuning in after a few years' absence to this week's final episode of *The Cosby Show* may get a shock. Theo (Malcolm-Jamal Warner), a junior-high student when the series began, is graduating from college. Vanessa (Tempestt Bledsoe), once a pudgy preteen, is in college too, and has weathered a broken engagement. Cute little Rudy (Keshia Knight Pulliam) has ceded the spotlight to a passel of even cuter, littler kids: Olivia, 6, stepdaughter of No. 2 daughter Denise (who



Gore at home near Washington: his travels took him to the Aral Sea, now dead, and other disasters

Sound Environment, Sound Economy

BY AL GORE

Special to The National Law Journal

THE AMERICAN people are being asked to choose between protecting our environment and strengthening our economy. That's the choice President George Bush and Vice President Dan Quayle are asking us to make. It is not just short-sighted, it is irresponsible. And it is just plain wrong.

Fortunately, the American people are getting a second opinion before accepting this false choice as true. They're willing to work for a strong economy. And because they care about protecting the environment they will leave their children, they're willing to work to clean it up.

The simple truth is that protecting our environment means new business and increasing profits. Protecting our environment ensures that the United States will remain competitive in the international marketplace in the future. It means strengthening our economy. It means meeting the challenge from our competitors, such as Germany and Japan and others already moving to secure their place and their profits from these growing markets.

If we fail to act, we lose. We lose jobs, we lose opportunities, we lose our natural resources and the brighter future every parent hopes to offer their child.

For example, during negotiations on a climate convention signed at the June International Earth Summit in Rio de Janeiro, Brazil, the administra-

tion argued that the United States could not afford to stabilize emissions of carbon dioxide, the major cause of global warming, at 1990 levels by the year 2000. That argument ignored the administration's own data and analyses showing that we can not only afford to stabilize emissions through voluntary energy conservation and other measures, but we can do it at a profit. We can enhance business profits and protect our environment *at the same time*.

What was once called too expensive is now called a bargain too good to pass up.

We have had a difficult time in the past coming to grips with the fantastic new powers we've gained from the

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A Clean World Is Good for Business

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technologies that drive our industrial society. Just as nuclear weapons transformed the consequences of all-out warfare, so thousands of new technologies that magnify our ability to exploit the earth have transformed our relationship with the earth.

At the dawning of the nuclear age, Albert Einstein said, "Everything has changed, except our way of thinking." During the last few decades, human beings have tried to come to grips with a new way of thinking about warfare. We have not fully acknowledged the debt that all humankind owes to Brazil and Argentina and other nations in South America that had the courage to abandon this technology of nuclear weapons and make a pact to stop the march that other nations began toward nuclear weaponry. If such progress can be made in the area of war technology, we can certainly move forward together to improve our management of industrial technology.

So now we face the necessity of arriving at a new way of thinking about our relationship to technologies for exploiting the earth. Our successful start in dealing with CFCs, or chlorofluorocarbons, give us cause for hope because agreements have been reached by most nations of the world that will eventually result in their phaseout. We must build on that success by developing a new partnership between North

and South, industrial countries and developing countries, that will work to counter global warming; to preserve our dwindling forest resources and other critical ecosystems; and to clean our air, our fresh-water resources and our oceans.

Here at home, we must accelerate the development of new technologies that foster economic progress without environmental destruction. We must commit to using and promoting renewable energy technologies and work to move these programs from the bottom of the list of priorities to the top. We can start by taking advantage of the wealth of expertise and talent in our national labs and other federal facilities, bringing them together with the private sector to produce these new technologies.

New Technologies

Policies, technologies and processes that prevent or stop pollution at its source rather than clean it up later offer unprecedented business opportunities. Last year, Northern Telecom Ltd., which has its American headquarters in Nashville, Tenn., became the first major electronics company to eliminate the cleaning solvent CFC-113 from its manufacturing operations. The company used available technology, working with its customers and vendors to create alternatives to the CFC solvent. Northern Telecom estimates that the use of the alternative

process will prevent nearly 9,000 tons of CFCs from being released over the next eight years, while generating savings of \$50 million.

Companies with the best environmental strategies will lead business in the 21st century. They are among the most competitive and profitable. Japan has already recognized and seized upon this economic opportunity through energy efficiency and also by investing in the future.

For example, Japan's Ministry of International Trade & Industry began work in 1990 to create the Research Institute of Innovative Technology for the Earth, intended to develop environmental technologies. In addition to \$80 million in seed money from the ministry, Japanese industry invested \$45 million in the first year of operation. Japanese companies have recognized that huge profits can be made by developing and using environmental technology.

The American people know, too, that we can both save the environment and strengthen the economy. They know we do not have to sacrifice economic stability and jobs to protect the world around us. It can and must be done.

The American people want from their leaders vision and courage, understanding, compassion and real commitment on these issues. They expect and deserve leaders who will amplify their voices, not overpower them.

Green giant

Looking at Al Gore's legislative record, one would hardly judge him an "environmental extremist," the label the White House has tried to pin on him. Though he has been a vocal and effective critic of the Bush Administration's environmental failures, and though greens support him enthusiastically, his ecological voting record puts him well into the middle of the pack of Democratic senators. Indeed, Gore's lifetime grade from the League of Conservation Voters, a consortium of mainstream environmental groups, is a middling seventy-seven out of a possible 100. Early in his congressional career, in fact, Gore failed one of the environmentalists' litmus test issues of the late '70s by voting against protecting the endangered snail darter in favor of constructing the Tellico dam in his home state of Tennessee.

Critics in the Bush Administration want it both ways. While branding Gore an extremist, they accuse him of not being an effective legislator on the issues. "Quite frankly, there is not much there," said Michael Deland, chairman of the White House Council on Environmental Quality. "There has been a lot of rhetoric but not much in the way of performance." Administration officials point out that Gore was not a major player on many of the most important environmental bills taken up by recent Congresses. These include the Clean Air Act amendments of 1990, the 1990 farm bill, the national energy strategy, the highway bill, the elevation of the EPA to cabinet level, the oil pollution act, nuclear liability legislation, and others. Indeed, even some environmental lobbyists say Gore has been less influential than he could be because he does not serve on the Senate Environment and Public Works Committee or any other key committee concerned with environmental matters.

In fact, Gore's record is substantial. He was the author of several major

amendments of the 1990 Clean Air Act re-authorization, including requiring the phaseout of ozone-depleting hydrochlorofluorocarbons. His proposal for a "strategic environmental research and development program" to bring the research resources of the Defense Department to bear on global environmental problems was adopted in 1990. He was the author of a resolution calling for the protection of Antarctica from mining and other development. He was also a leader of the successful effort to bar oil development from the Arctic National Wildlife Refuge. He has been particularly active in promoting environmentally sound technology to help restore the nation's competitiveness in international markets, successfully pushing, for example, for the creation of a new national network of high-speed information "super-highways" that would link powerful computers with schools and research centers. Since his vote on the snail darter, Gore "has worked strongly for the protection for species and habitat," according to the League of Conservation Voters. And as a member of the House in the late '70s, Gore presided over a landmark investigation that disclosed the magnitude of the nation's hazardous waste problem. Shortly thereafter, he co-sponsored the Superfund bill to clean up toxic waste sites.

Gore is not a member of "The Club," the coterie of influential senators who cut deals over legislation. But despite his lack of insider status, he is without question the most prominent environmental activist in the United States Congress. His leadership stems from his demonstrated ability to recognize, master, and articulate emerging issues. He has been well ahead of the curve on issues from hazardous waste in the '70s to global warming, destruction of the earth's protective ozone layer, and the disappearance of species in the '80s and '90s. *Earth in the Balance*, Gore's best-selling book on the global environment, is a meticulously researched, careful analysis of some of the most important geopolitical issues of our

time. What is more, the book offers a long-range strategy for asserting American leadership in a new system of collective security built around the "central organizing principle" of environmentally sustainable economic development.

The Bush-Quayle campaign has used the book as exhibit A for its charges that Gore is an extremist. Quayle has called it the Democratic "manifesto" and said that following its recommendations would require sharp increases in taxes and lose thousands of jobs. The Republicans are particularly shrill about Gore's suggestions on the use of carbon taxes to encourage the reduced consumption of fossil fuels, hoping once again to stimulate a knee-jerk reaction to the word "tax." The Clinton campaign has handled the book rather gingerly, particularly the carbon tax idea, which it has described as only a suggestion for study. In fact, Gore's own words unmistakably show that he thinks it would be a good idea. But he also states unequivocally that he is not advocating a tax increase. Under the plan, other taxes would be lowered commensurately. As for the idea of building a new system of collective security around sustainable development, it was embraced by almost all governments at the Earth Summit in Rio. If Gore is an extremist for proposing it, so are the leaders of Germany, Japan, and other industrialized democracies.

The good news for Gore is that the extremist tag does not appear to be sticking, even within the Administration. Gore "cares a lot and knows a lot about the issues," EPA administrator William K. Reilly said in a recent television interview, adding, "I don't think he's an environmental extremist." Of course, within the administration, Reilly's a bit of a fringe figure himself.

PHILIP SHABECOFF

Philip Shabecoff's book on the environmental movement, *A Fierce Green Fire*, will be published in January by Hill & Wang.

THE ECOLOGY OF SURVIVAL

By Al Gore

Theories about history are built on sand. Yet millions have died believing in their ultimate truth. It's because we have paid such a high price for historical theorizing that we can ill afford to lose our perspective now, or to stop thinking about where we've been and what it tells us about where we're going. To paraphrase Santayana, those who cannot remember the past ought to be condemned to reread it.

Seventy-five years, the measure of one magazine, is now the measure of one human lifetime—the number of years an American child born today can expect to live. Looking back 75 years, we can accept or ignore any number of political, cultural, or strategic lessons. Looking ahead into the life of that child, however, we see two indisputable patterns. With the invention of nuclear weapons we changed the character of warfare in ways that must preclude any conflict on the scale of the one that began in 1914. That lesson is widely understood, and we have some basis for hoping that it will guide our future affairs. The second dramatic change has not yet been so widely accepted. Humankind has suddenly entered into a new relationship with the planet Earth. Our survival depends upon our capacity to grasp, and quickly, the extent to which the current pattern of world civilization threatens the ecological system that sustains life as we know it.

From this side of the Atlantic, at least, the future looked better in 1914. Back then America didn't need a coup in Panama; that year we opened the Canal. Productivity growth in the United States was almost too fast to measure. In the fall of 1913 a Model T came off the assembly line at Henry Ford's new Highland Park plant every 12 hours. By the spring of 1914 that plant was producing one car every hour. The world environment was as untrampled as the poppies in Flanders Fields. The biggest threat to the rain forest was Tarzan, created that year by Edgar Rice Burroughs.

From politics to art, the world was breaking loose from the old order. The acceleration of history was already well under way. Einstein's theory of relativity had jolted science. Cubism was fracturing the way artists interpreted the world. Ancient dynasties and im-

mense empires began to die with the Archduke Ferdinand. The World War hardly made the world safe for democracy, but it did put the foes of democracy on notice. The period since then represents a succession of struggles between democratic powers and tyranny in all its guises. In 1914, as Europe descended into carnage, by far the greater number of the world's peoples lived under tyrannies. But of the major nations that went to war in Europe, only the established democracies survived with their political systems intact. The interwar years were marked by philosophical as well as geopolitical struggles on a global scale, with the ideologies of fascism, communism, and democracy in contention. In World War II, not only was fascism defeated; its exemplars underwent apparently permanent societal conversions, from which they emerged as democracies themselves. Now we appear to be experiencing the rapid dissolution of Communist tyranny. The process is advancing in Europe and perhaps gathering strength in Asia, the result of irresistible internal forces that can be set back but not permanently stopped.

In the developing worlds of Latin America, Africa, and Asia, the battle between democratic and tyrannical forms of government has been less decisive. Nevertheless, over the last decade the trend has been toward democratic forms, from Argentina and Brazil to the Philippines. Looking at this pattern, some conclude that humankind is maturing out of tutelage, throwing off submission to the arbitrary rule of those who claim legitimacy by divine right or historical "law" and embracing instead the self-rule that derives its legitimacy from the will of the electorate. Perhaps so. But experience ought to make us wary of premature declarations of victory, and we should certainly reject the idea that we have arrived at the end of political history. The human imagination is much too fertile for that, and the human capacity for inventing systems of political belief has not exhausted itself. We can expect that "isms" will continue to appear, displacing others in the hearts and minds of millions, over cycles of time that may run from decades to centuries and even to millennia.

Yet because of the events and accomplishments of the last 75 years, there are indeed critical, and permanent, new factors in the life of humanity. These relate to the physical world, whose constants are beyond the

AL GORE is a U.S. Senator from Tennessee.

power of ideological manipulation. We have, in the course of a single life span, managed to grasp the levers of our own destruction: first, in the form of nuclear weapons; and second, in the form of the industrial destruction of the biosphere, which has begun to move ahead at geometric rates of increase. When you consider the relationship of the human species to the planet Earth, not much change is visible in a single year, in a single nation. Yet if you look at the entire pattern of that relationship from the beginning of the modern era in 1914 until today, the contrast is starkly clear.

In 422 years, from the time of Christopher Columbus until 1914, world population tripled, to 1.6 billion. In the last 75 years it has tripled again, to 5.2 billion. We are told that in the next 75 years it will double and perhaps even triple once more. Nearly every index of the impact of modern industrial society follows the same pattern of sudden, unprecedented acceleration. Americans consumed around 40 billion kilowatt-hours of electricity in 1914. Last year we used 60 times that much. U.S. production of synthetic organic chemicals (from PCBs to pesticides to plastics) has gone from almost nothing to 225 billion pounds per year—half a ton for every American. The world's fossil fuel use has increased ten times over, and with it, carbon dioxide has flooded the Earth's at-

mosphere. Other greenhouse gases have soared upward at similar rates: U.S. nitrogen oxide emissions are up 800 percent since 1914; methane concentrations have nearly doubled; and the world's emissions of chlorofluorocarbons, which had not yet been invented in 1914, have increased by 80 times since World War II, and are still doubling every decade, posing a deadly threat to the Earth's protective ozone shield.

The hole in the ozone layer is only the most widely accepted manifestation of a much broader challenge to the Earth's environment. We are destroying forest land at the rate of one acre per second; we are poisoning our rivers, lakes, groundwater, and oceans; we are causing living species to be destroyed at a rate 1,000

times greater than at any time in the last 65 million years; we are filling the atmosphere with gaseous wastes that threaten changes to the climatic system in the next 75 years as large as those that accompanied the ice ages over hundreds of thousands of years. These dramatic changes are taking place not only because the human population is surging and our standard of living has increased, but because we tolerate environmental vandalism on a global scale.

For 75 years the price we would have to pay for our actions has seemed impossibly remote. Only now are we beginning to see, in Ivan Illich's phrase, "the

shadow our future throws." Whether we look forward in hopes of glimpsing what the future holds or gaze backward at the events that have dominated the world since 1914, we see something that resembles one of those artist's depictions of relativity theory, with time and space curved like a checkerboard grid painted by Salvador Dali. Our political awareness of the world is shaped and bent by events. Vast calamities such as the world wars exert a powerful gravitational pull on every idea we have about the world around us. And, just as in Einstein's theory, future events can exert the same gravitational pull on our thinking as events in the past. The political will to slow down the nuclear arms race came from the

feeling that we were being pulled toward a future we had never seen but didn't want. Now, as we are being drawn toward the brink of ecological collapse, we must be willing to consider drastic ecological action.

There is no way for humanity to forget its skills for self-destruction, by war upon each other or by war upon the environment. In an exchange of Promethean proportions, we have acquired deadly knowledge that we can never lose but must learn to keep under control forever. That is the new and permanent point of departure for political wisdom. And if we are to succeed in keeping civilization intact, it is clear that oneism must be revived and renewed: globalism—by which I mean not some kind of world order prescribed and imposed

Thorstein Veblen Reconsidered *George Charney*

THE NEW REPUBLIC

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How Clean Is Clean?

The Editors on Water Pollution

Moving to the Suburbs - Robert Cassidy

Shooting at Henry - John Osborne

War Powers - Alexander M. Bickel

The Old Decency - Reed Whittlemore

Populist Ramblings - Peter Barnes

COVER, JANUARY 22, 1972

from above, but rather a sense of responsibility for the good order of the world, rising upward from all of its peoples, and ultimately manifesting itself in the behavior of their governments, both domestically and in international relations.

A new globalism cannot be based on some transformation of human nature, by which people will be endowed with new virtues of foresight and restraint. In the last 75 years we have had enough of efforts to create the New Man in one image or another. Jefferson's educated citizenry will have to suffice. The globalism we need can develop out of roots already universally present. It will be an enlightened, informed extension of our desire to survive, and of our often even more intense desire to provide for the survival and well-being of our children and grandchildren. Globalism will be marked by the sense that if our affairs are conducted on the basis of an unlimited struggle for supremacy—whether among nations or over nature—the result will be an increasingly high risk of almost immeasurable loss for all. It will be marked also by a sense that at some level, cooperation secures for all of us what strife cannot.

Mikhail Gorbachev now speaks as an advocate of a globalist approach based on mutual consent, rather than hegemony. It is certainly a revolution of sorts to hear such things from a Soviet leader. But it is well to remember that Gorbachev has at best caught up with the doctrine of collective security as propounded by Woodrow Wilson in 1918 and again by Franklin Roosevelt in 1945.

The essence of the doctrine of collective security is that security is indivisible and mutual: it must be provided for all, by actions to which all must contribute, or it exists for no one. That is certainly the lesson we must apply as we struggle to redefine our security relationship in military terms. Reductions of strategic and conventional weapons are desirable, but not in the abstract. They must seek a result in which the residual forces are perceived by all concerned parties to be stable, in the sense of lacking the capacity for decisive surprise. And reductions must be carried out in a political context that buttresses the expectation of peace and justifies diminished preparation for war.

But the notion of mutual security must now move from an exclusive concern with security as an issue of peace or war to a definition of security that includes the global environment. With that in mind, I have proposed a Strategic Environment Initiative (SEI). Let's face it: the Strategic Defense Initiative can't assure our survival for the next 75 years. A Strategic Environment Initiative might. I am no admirer of SDI, but one doesn't have to be an admirer to recognize that it drew together previously scattered facilities and resources and that it attracted a generous share of the government's budget for research and development. We need to approach the technological challenge of environmental protection and economic growth with at least the same intensity—and with comparable or greater levels of funding.

If we continue our current pattern of technology and production, we will be able to achieve economic growth in the near term only at the cost of massive environmen-

tal disorder in the not so distant future. For the developing world, the problems of reconciling economic growth and environmental protection are compounded by high rates of population growth and a massive debt burden. Yet the cooperation of Third World nations is crucial to controlling problems as vast as global warming. Their share of greenhouse gas emissions from fossil fuels could grow from about 20 percent today to as much as 60 percent by 2050. A Strategic Environment Initiative would promote environmentally sustainable development by identifying and spreading new technologies to developing countries, where 95 percent of world population growth will take place during the next century. Here in the United States, the Strategic Environment Initiative must modernize technologies and practices in every economic sector, from more fuel-efficient cars and energy-efficient appliances to manufacturing that relies on recycled material, to a second green revolution requiring fewer fertilizers and pesticides. The emerging consensus for environmental protection is opening the door to solutions once considered politically impossible.

It will not be enough, however, to change our laws, policies, and programs. We must also change the way we think about ourselves, our children, and our future. For a very long time, we have seen ourselves as separate from the world around us. At least since the beginning of the scientific method, and probably since Aristotle, we have seen nature as the object of our experiments, exploitation, and dominion. As scientists reflected on Einstein's revolution, they discovered that the act of observing alters what is observed. Heisenberg established that "uncertainty principle" in 1923. But its philosophical application is not limited to the subatomic world he described. In a kind of Heisenberg Principle writ large, we have altered—without realizing it—our relationship to nature itself. We must now create a new pattern of thinking in which we once again see ourselves as a part of the ecological system in which we live. We have lost, so to speak, our eco-librium.

How can we gain sufficient distance from ourselves to see a pattern that contains us in a larger context? My own religious faith teaches me that while we are given dominion over the Earth, we also are required to be good stewards of the Earth. If our actions cause the destruction of half the living species God put on this Earth during our lifetimes, we will have failed in the responsibility of stewardship. Are those actions, because of their result, "evil"? The answer depends not upon the everyday nature of the actions, but upon our knowledge of their consequences. For the individual actions that collectively produce the world's environmental evil are indeed banal when they are looked at one by one: the cutting of a tree, the flicking on of an air conditioner, the dumping of some inconvenient waste.

"Evil" and "good" are terms not used frequently by politicians. Yet I do not see how this problem can be solved without reference to spiritual values found in every faith. For many scientists on the edge of new discov-

eries in cosmology and quantum physics, the reconciliation of science and religion sometimes now seems near at hand. It is a reconciliation not unlike the one we seek between humankind and nature. But even without defining the problem in religious terms, it is possible to conclude that the solutions we seek will be found in a new

faith in the future of life on Earth after our own, a faith in the future that justifies sacrifices in the present, a new moral courage to choose higher values in the conduct of human affairs, and a new reverence for absolute principles that can serve as stars by which to map the future course of our species and our place within creation.

To Skeptics on Global Warming . . .

By Al Gore Jr.

WASHINGTON — When environmental and financial experts from around the world gathered in Washington this week for a White House-sponsored conference on global warming, they expected a serious discussion. Instead, they were surprised and angered to hear President Bush wholeheartedly endorse delay and inaction.

Global climate change is real. It is the single most serious manifestation of a larger problem: the collision course between industrial civilization and the ecological system that supports life as we know it.

The purpose of Earth Day is to alert people around the world to that impending collision. And yet the Bush Administration, according to a leaked memo, is advising its policymakers that "a better approach is to raise the many uncertainties," and argue with their skeptics that nothing should be done until unresolved questions are definitively answered.

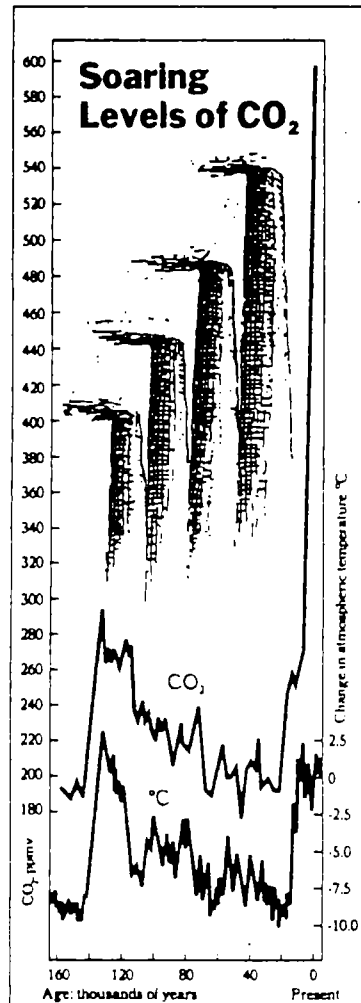
What are the skeptics' questions? There are several of the most prominent. None of them stands up under scrutiny.

Q: Aren't the dire predictions about global warming based on unreliable computer models? How do we know that there is any correlation between increased levels of carbon dioxide in the atmosphere and changes in temperature?

A: The most compelling evidence comes from careful studies of tiny air bubbles in Antarctic ice. These show that has actually happened to the earth's climate during the last 50,000 years. As illustrated by the accompanying graph, carbon dioxide and temperature have gone up and down in lockstep for as far back as scientists can measure.

Through the last two ice ages and the period of great warming in between, levels of carbon dioxide have fluctuated between 200 and 300 parts per million. Even the skeptics agree that concentrations of carbon dioxide will be pushed to levels of 600 parts per million within the next 35 to 45 years. It is irresponsible to assume that after moving in tandem with carbon dioxide for 160,000 years, temperatures will not be affected by those dramatic increases.

Q: Do we know enough to act? Shouldn't we study the problem until



The New York Times: Illustration by Janusz Kapusta

we eliminate the uncertainties?

A: That was the Administration's excuse last year, when it asked a distinguished United Nations-sponsored group of scientists to answer that question. A draft of the scientists' long-awaited report, leaked to the press this week, concludes that we must act now. The scientists say there's still a chance that the problem won't be as bad as they fear, but there's an equal chance that it will be much worse than predicted.

Q: Come on, isn't this really a little far-fetched? After all, the Earth is a big place and probably has some kind of natural "thermostat" to maintain the present climate. Don't some scientists say that clouds or the oceans or sunspots will offset any effect caused by human activity?

A: While the Earth is indeed vast in size, the atmosphere surrounding it is less than one one-thousandth the

thickness of the Earth's diameter, a thin blue line around the crust of the Earth. Unprecedented population growth and new technologies for burning fuels, clearing forests and manufacturing chemicals have given humankind the ability to alter the composition of the atmosphere.

Everywhere on Earth, for example, each lungful of air now contains 600 percent more chlorine atoms than it did 40 years ago — or 3 billion years ago, for that matter. That chlorine is responsible for burning a hole in the stratospheric ozone layer. Similar increases in methane, nitrous oxide and other polluting gases add to the seriousness of global warming.

Q: But how can we trust scientists on this issue when some of them say global climate change is real and some of them say it's not?

A: Five hundred years ago, most scientists said the world was flat. Most people believed them because the Earth did indeed look flat. The new "model" of a round Earth was based on mathematical calculations that they could neither touch nor understand. Similarly, Galileo was punished for his then-novel view that the Earth orbited the sun, instead of the other way around.

In the last 20 years, eminent scientists continued to ridicule the theory of continental drift. The theory of global climate change used to be ridiculed, too. But in the last few years, the overwhelming majority of scientists who have examined the evidence have agreed that the problem is real.

Q: Didn't NASA just report that new measurements of the Earth's temperature in the last 10 years showed no evidence of warming?

A: That was the impression some people got. What NASA actually reported was that "nothing could be said" about a warming trend one way or another "due to the relatively short satellite data record." Temperatures naturally fluctuate, so much from year to year that a single decade is not a long enough yardstick for a long-term trend. The decade as a whole, according to several other studies, was the hottest since temperatures have been recorded. The six hottest years on record occurred in the 1980's.

Q: O.K., suppose temperatures do rise by a few degrees. So what?

A: Even small changes in the average global temperature can have dramatic consequences. The last time there was a change as big as the one some now predict, temperatures dropped several degrees and what is now New York City was covered by ice one kilometer thick.

But this isn't about temperatures

alone. It's about drastically changing climatic patterns that affect the distribution of rainfall, the intensity of storms and droughts and the directions of prevailing winds and ocean currents, which in turn dramatically affect our weather and climate. Some scientists say the first effects will be erratic weather patterns with extremes of heat and cold.

Q: Isn't it easier to adapt to these changes than to prevent them?

A: The changes could occur so swiftly that effective adaptation might become virtually impossible. The longer we wait, the more unpleasant our choices become.

We are in fact conducting a massive, unprecedented — some say unethical — experiment with consequences for all future generations. As

... You're wrong on facts and reasoning.

you make your choice, bear in mind that you're choosing not only for your own generation but for your grandchildren as well. And remember too that our abuse of the environment could lead to the extinction of more than half of all species within the lifetimes of our children.

Q: Isn't the cost of preventing this problem too high?

A: Many of the solutions, such as eliminating subsidies for clear-cutting forests, actually save money. In any event, the costs of inaction are much higher, even if the skeptics refuse to measure them.

Q: The changes you say are needed are too sweeping to be politically possible.

A: What if I had asked you six months ago to assess the possibility that people in every country in Eastern Europe would abandon Communism, sing "We Shall Overcome" and embrace democracy within 90 days? Would you have called that "unlikely?" We all would have. But it happened because people changed their way of thinking about Communism.

People are changing their thinking about the importance of protecting the global environment. We too are showing our willingness to act. The obstacles may seem immovable, but so did the Berlin wall. With bold leadership and a new political "ecilibrium," we too shall overcome. □

Al Gore Jr., a Democrat, is a Senator from Tennessee.

POSTCARD ANTARCTICA

UNBEARABLE WHITENESS

I'M TRYING TO remember what I thought about Antarctica before I came here. For the most part, I didn't think about it at all. It is just plain remote. From the other side of the world, in Christchurch, New Zealand, it is another eight hours due south by plane to the main U.S. base, McMurdo, and then another three hours from there to the South Pole.

I came to the coldest place on Earth to hunt for information about global warming, but I was unprepared for the continent itself. For example, I didn't know that the land area is half again as large as the entire United States. Or that 90 percent of all the ice in the world is here—which means, among other things, that there is really no comparison between this place and the Arctic. Antarctica is larger, more isolated, more important in the global ecosystem—and much colder.

You don't expect a continent at the "bottom" of the world to have an altitude three times higher than any other continent. When I stepped out of the ski plane at the Pole, my awareness was divided between the 56-degree-below-zero weather and the dizziness of being at almost 10,000 feet. The altitude of the enormous polar plateau is due primarily to ice that is almost two miles thick. Although its ice and snow contain 70 percent of all the fresh water on Earth, Antarctica gets so little precipitation that it is classified as the world's largest desert. And while the continent goes dark for six months in winter, it still receives more sunlight during its six-month-long summer day than the equatorial regions receive in an entire year. Yet all that light creates virtually no surface heat, because most of it is reflected right back up into space. For anyone caught in that crossfire of whiteness, sunglasses are a medical necessity.

The ice shelf expands in winter to seven times its summer maximum. The small population of human beings sent here by 22 nations expands in summer and contracts in winter by proportions almost precisely inverse to those of the ice.

WHILE MOST of Antarctica is the cleanest, most pristine area on Earth, the waters immediately adjacent to the American base are among the most polluted in the world. PCBs and "we don't know what else," dumped years ago, have killed every vestige of life in a small area of McMurdo Sound. The nuclear power plant that leaked in 1962 was dismantled and returned to the United States. But even today the base dumps "diluted" raw sewage directly into the sound and burns its solid waste in an open pit.

In the last few years, several other developments have brought new attention to Antarctica. In 1985 an emergency expedition confirmed the existence of a large and growing polar hole in the stratospheric ozone layer (which protects humans from deadly ultraviolet-B radiation). The same team found incontrovertible evidence

that man-made chemicals called chlorofluorocarbons (CFCs) were responsible.

A new international agreement was signed this year to reduce CFC production a little, though not enough. Meanwhile, the world's fossil fuels are being burned at such a rapid rate that the resulting carbon dioxide, along with other "greenhouse gases," may have already triggered the long-predicted global warming. At least some scientists said this summer that they are finally convinced.

The air is clearer and crisper in Antarctica than anywhere I've ever been, and visibility is remarkable over great distances. But that can suddenly change, as I learned firsthand, during something known as a "whiteout." The winds of a sudden storm saturate the air so thoroughly with snow that first the horizon, then closer landmarks, and then even the hood of your vehicle can disappear in a shroud of whiteness. Travelers lose their orientation and perspective. Some tell stories of seeing a building in the distance only to find that it was a pack of cigarettes a few feet away. Having just lived through a general election campaign in which Willie Horton was a more prominent political landmark than the budget or trade deficit, I had the feeling I had gone from one whiteout to another.

I CAME HERE because Antarctica is now the frontier of the global ecological crisis. High in the Transantarctic Mountains, a badly sunburned scientist talked about the ice cores he and his team were pulling from a deep hole drilled into the glacier on which we stood. He interpreted the annual layers of ice and snow the way woodsmen read tree rings. "Here is where the U.S. Congress passed the Clean Air Act," he said, pointing to the beginning of the 1970s. Moving down the ice core, back to the early 1960s, he added, "And here is where the world stopped atmospheric nuclear testing." These and other ice cores contain highly accurate information about the makeup of the Earth's atmosphere year by year for tens of thousands of years. From such cores, we know, for example, that there were dramatically lower levels of carbon dioxide in the atmosphere at the peak of the last Ice Age, 20,000 years ago, when the island of Manhattan was under one kilometer of ice. By contrast, the ice and snow laid down in the 1980s show levels of carbon dioxide, methane, CFCs, nitrous oxide, and other gases responsible for the greenhouse effect higher than they have been in at least 160,000 years (as far back as the ice cores measure). CFCs are receiving particular attention because they cause not only 20 percent of the greenhouse effect but virtually all of the destruction of the ozone layer.

Something else is different about the ice layers from the 1980s—they *look* different to the naked eye because of thick, alternating layers of "hoar" ice, apparently caused by partial melting and recrystallization into larger granules. The scientists are as yet cautiously withholding judgment on whether this is the clear signal of Antarctic warming that many have anticipated.

When I say Antarctica is the frontier of the ecological crisis, I don't mean only that pollution can now be found at the remotest point on Earth. Antarctica is also the place

where both ozone destruction and global warming have their first and most dramatic impacts. It is also increasingly apparent that Antarctica plays a far more significant role than any other part of the Earth in the global climate system. For one thing, the cold waters surrounding the continent absorb more carbon dioxide from the atmosphere than all the rain forests, and create the nutrient-rich "bottom water" for most of the world ocean of which Antarctica is the epicenter. Also, aside from the sun and the rotation of the Earth, Antarctica is the single most powerful engine driving the world's weather, redistributing its massive coldness through the winds of the air and the currents of the sea. As greenhouse gases trap more heat in the Earth's atmosphere and temperatures climb, they are expected to climb fastest of all here in Antarctica, because any melting at the edge of the ice shelf is accompanied by a dramatic change in the albedo—reflectivity—of the surface exposed to sunlight. The increased absorption of the sun's rays by the ocean then magnifies the local warming trend, melting more ice at the margin and absorbing yet more radiation from the sun.

THERE ARE three potential catastrophes that scientists fear could eventually be caused by the warming of Antarctica. First, a dramatic rise in sea level. This would come not from the melting of sea ice, which is already floating in the ocean, but from a rapid breakup of the massive West Antarctic ice shelf, which scientists believe could then plop into the ocean, raising the sea level 15 to 20 feet, wiping out low-lying coastal cities and nations like Bangladesh. But this is further off than most greenhouse impacts, perhaps 200 years.

Second, something that some scientists worry could occur much sooner is a change in the ability of the Antarctic seas to absorb carbon dioxide as they get warmer. Partly because it is so cold, the southern ocean now absorbs between one-third and one-half of all carbon dioxide emissions from industrial nations. Since carbon dioxide is by far the most important greenhouse gas, we must concern ourselves not only with the rate at which our civilization produces it but also the rate at which the Earth absorbs it.

The Earth has two lungs—the forests and the southern ocean. Unfortunately, we are destroying our forests at the rate of one football field every second, an area the size of Tennessee every year. Since the oceans of the world contain 50 times as much carbon dioxide as the atmosphere, even small changes in the temperature-sensitive mechanisms by which carbon dioxide is transferred back and forth between the oceans and the air can have profound implications.

Third, scientists fear that if their predictions are correct, and temperatures at the poles increase far more rapidly than at the equator, then the very pattern of the world weather system might change. This is because the difference between temperatures at the equator and at the poles has been relatively constant for a long time. As a result, the

redistribution of heat from the equator to the poles and cold from the poles to the equator has been accomplished through an essentially constant pattern of wind and ocean

currents. If temperatures rise disproportionately in Antarctica, the equilibrium could change, creating new patterns that would redistribute less cold and more heat. Something like this once happened on a small scale in Greenland. The so-called "little ice age" beginning 500 years ago abruptly covered the southern and western agricultural areas that gave Greenland its name with the ice and snow that now make people wonder where the name came from.

Similar though larger and anthropogenic global weather changes now thought to be under way are expected to cause widespread droughts and heat waves within our children's lifetimes. Indeed, some argue they have already begun.

In spite of these enormous stakes and in spite of the central role played by Antarctica, an international scientific conference in Tasmania this fall concluded, "There is no established strategy either for early detection of climate change in Antarctica or understanding and prediction of the probable effect of climate warming on atmospheric and oceanic circulation, ice-sheet volume, and sea level."

Even at that, the scientists are further along than the politicians. Why are we waiting to act?

Perhaps partly because of the unprecedented nature of the crisis. It is simply beyond our experience and outside of what we call common sense. So we put it in the place in our minds where Antarctica exists and tag it with the same mental labels—remote, alien, hopelessly distorted by the maps of the world we inhabit, too hard to get to and too unforgiving for us to stay very long.

The real question is whether the world's political system can find a new equilibrium before the world's climate system loses its current one. Even now, the winds of change are approaching hurricane force. It took a million years for the population of the world to reach two billion. Now, in the course of a single human lifetime—mine—it is rocketing toward ten billion (and is already halfway there). Startling graphs showing the loss of forest land, topsoil, stratospheric ozone, and species all follow the same pattern of sudden, unprecedented acceleration in the latter half of the 20th century. And yet, so far, the pattern of our politics remains remarkably unchanged.

When it does come, the change will involve a new set of global goals, and a new way of thinking about ourselves, our children, and our whole world—even Antarctica.

AL GORE

Al Gore is U.S. senator from Tennessee.

The Green Factor

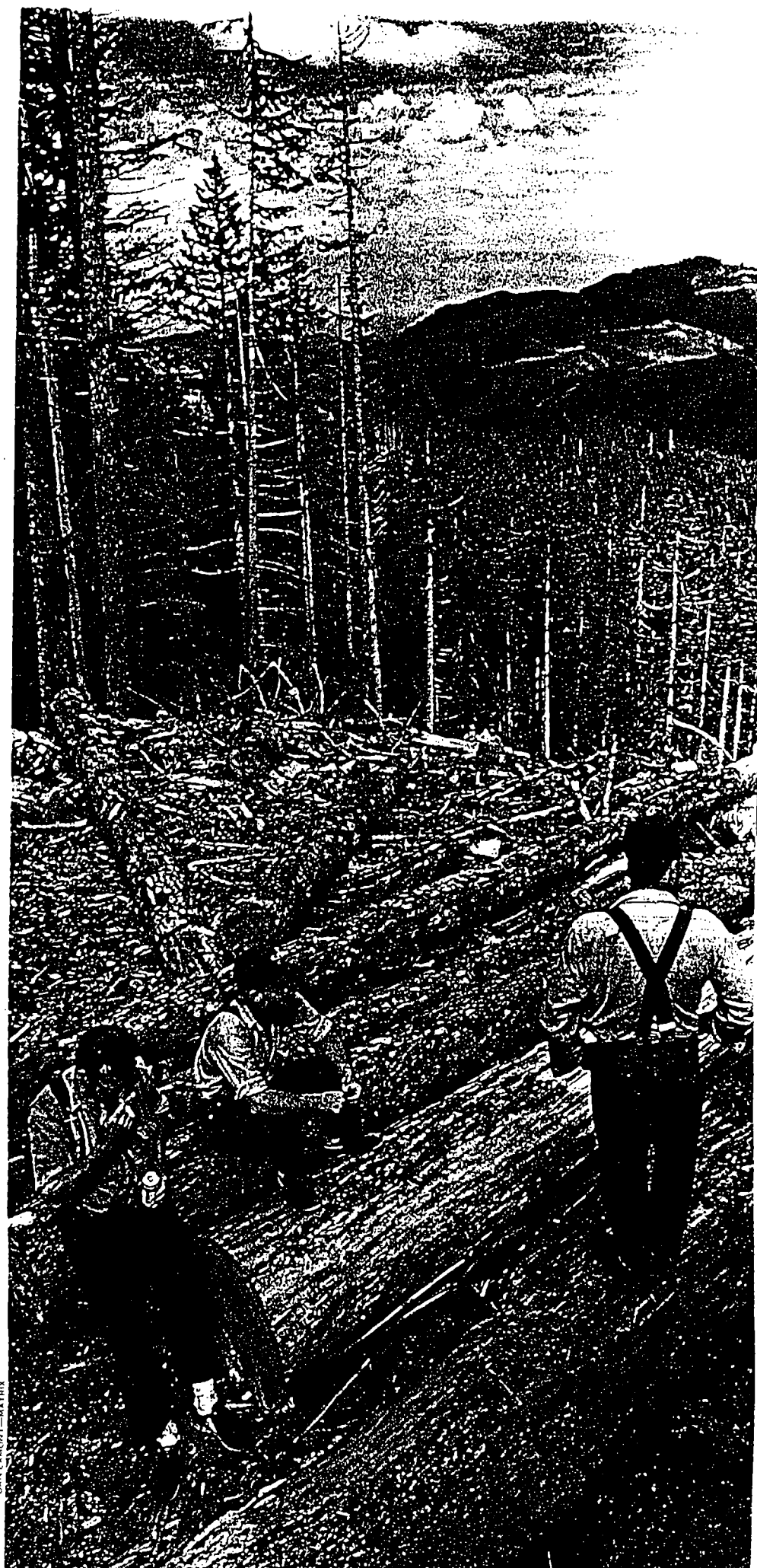
Does protecting the planet destroy jobs? Bush says yes, Clinton says no, and their running mates fight it out on the stump

By EUGENE LINDEN

WHAT HAPPENED TO THE "Environmental President"? In 1988 Vice President Bush vowed to combat the greenhouse effect with the "White House effect," and mercilessly attacked Michael Dukakis for his failure to clean up Boston Harbor. But last June, President Bush played Scrooge at the Earth Summit in Brazil. In September he visited timber country in the Pacific Northwest, where he promised to lift a court-imposed injunction that has halted logging in federally owned ancient forests. His Interior Department is planning to open national forests to private strip mining. What happened between 1988 and 1992? Politics happened.

While the Administration has not entirely abandoned its green appeal—White House officials claim that Bush has done more for the environment than any other President since Teddy Roosevelt—the reelection team is betting that U.S. voters will put their anxiety over the economy ahead of their worries about the planet. Thus the Bush campaign is attempting to paint Bill Clinton as a hostage to environmental extremists who would sacrifice American jobs to mollify the tree huggers. Point man in this assault: Vice President Dan Quayle. His main target: Clinton's running mate, Al Gore.

Clinton, for his part, is betting that concern for the environment is more than



DAN LAMONT—AP/WIDE

MAN VS. NATURE: loggers clear-cut a stretch of forest in Washington State

a fad. He has assigned Gore the mission of delivering the message that working to preserve the biosphere can create rather than cost jobs. Clinton and Gore contend that sound environmental policies can be an engine of growth that will help the American economy compete with Germany and Japan in the 1990s.

The different ways the two camps use environmental issues reflect their divergent visions about the forces that will shape America's future. The Democrats argue that environmental decisions should be an integral part of economic planning. The Republicans seem to be saying the country should address environmental problems only when it can afford to. Nowhere do these differences emerge more sharply than in the attitudes of the vice-presidential contenders.

Senator Gore, who led the congressional delegation that attended the Earth Summit in Rio, is the Senate's most committed and knowledgeable environmentalist. Last spring Houghton Mifflin published Gore's best-selling *Earth in the Balance: Ecology and the Human Spirit*, a call for Americans to take urgent action in the face of a global ecological crisis.

Vice President Quayle, by contrast, argues that existing programs to improve the environment are more than adequate, that the state of America's air, water and forests is getting better, and that further improvements will come at the expense of jobs. Quayle plays a major policymaking role in this area as chairman of the President's Council on Competitiveness, an eight-member panel that, in the name of reducing government impediments to business, has worked to loosen environmental regulations on everything from wetlands to air pollution. The council was influential in persuading President Bush, virtually alone among world leaders, not to sign a treaty to protect endangered species at the Rio conference. The Administration's argument: that the treaty would harm the U.S. biotechnology industry.

In taking aim at the Democrats' environmental policies, Quayle ridicules Gore's book as "their manifesto." As described by the Vice President, *Earth in the Balance* is a collection of lunatic proposals that calls for a \$100 billion giveaway to the Third World, recommends new taxes that would put millions out of work, compares

capitalists to Nazis and calls for the elimination of the internal-combustion engine. "It's all pretty bizarre stuff," said Quayle in a speech in Grand Rapids, Michigan, last August. "This is a view detached from reality and devoid of common sense."

In his book, Gore does call for new taxes—but only to replace old ones. The idea is to tax ordinary workers less while making polluting industries pay the true costs of their activities. The \$100 billion figure is not a suggested giveaway but merely a computation of what the post-World War II Marshall Plan to reconstruct Europe would cost in today's dollars. The reference to Nazis is a greatly stretched interpretation of Gore's comment in the book that the failure in the past to heed the distress signals coming from the planet is analogous to the failure of the outside world to realize the seriousness of the German threat after Nazis destroyed Jewish homes and synagogues during the Kristallnacht rampage in 1936.

Gore also argues that during the next 25 years the U.S. should develop a more efficient alternative to the internal-combustion engine. It is hard to see why this is any more bizarre than sanctifying a 19th century technology as the core of American prosperity. "If Bush and Quayle want to pretend that 25 years from now our global competitors will be using the same technology on automobile engines that we are using today, they are kidding themselves," says Gore.

In Grand Rapids, Quayle attacked Gore for supporting congressional efforts to raise average fuel economy from 27 to 40 m.p.g., a move, Quayle argued, that would cost 300,000 jobs nationwide. This figure, taken from a study by the Motor Vehicle Manufacturers Association, is based on the unrealistic assumption that everyone now making a car that gets less than 40 m.p.g. would be put out of work. In contrast, a study to be released this week by the American Council for an Energy-Efficient Economy contends that improving fuel economy to 40 m.p.g. would lead to a net gain of 70,000 jobs by the year 2000. Howard Geller, executive director of the council, says fuel economy creates jobs by spurring the development of efficient new technologies for automobiles and putting money from gasoline savings into the hands of consumers. These gains, adds Geller, will more

than offset job losses in the oil business.

Gore says the jobs-vs.-environment argument is based on the same flawed logic that caused American businesses to disregard business guru W. Edwards Deming's seminal ideas on quality in past decades. "American manufacturers assumed that market forces had already perfectly balanced quality against cost and that any improvements would hurt the bottom line," says Gore. "Deming took his ideas to the Japanese, who proved that you could simultaneously improve quality and profits and proceeded to steal markets from American companies." Gore argues that Bush is now making the same mistake with pollution. The Japanese, already more energy efficient than the U.S., recognize that excessive pollution is a sign of inefficiency and that reducing pollution can help make industry more competitive. For Gore the real job of a competitiveness council would be to foster similar efforts to develop efficient technologies in the U.S.

PRESIDENT BUSH ALSO HAS ATTACKED Gore on the jobs-vs.-environment issue. During a visit to Colville, Washington, last month, he chastised the Senator for advocating protection of the spotted owl, which is endangered because 90% of its old-growth forest habitat has been cut. "It's time to put people ahead of owls," he said, and mockingly challenged Clinton to endorse Gore's book.

Though that message was obviously meant to appeal to Western voters, Bush may have miscalculated its effect. While he was applauded by the region's timber workers, many other Westerners realize that the issue of preserving the remaining fragments of old-growth forest is more complex than owls vs. lumberjacks. George Atiyeh, a former timberman and fourth-generation Oregonian, left the business after watching what clear-cuts have done to the Oregon landscape. "Either my eyes were lying, or I was kidding myself about logging being sustainable," he says. From the air, Oregon's national forests look far worse than the rain forests of Rondônia, Brazil, which has become a symbol of the wanton destruction of the Amazon. Atiyeh argues that automation and exports have cost far more jobs than the protection of endangered species has. Between 1980 and '88 the amount of timber cut in western Oregon increased 19% while timber employment fell 14%. The Administration's hard line on the environment does not appear to be winning many votes—and may even be hurting the Republicans. In a TIME/CNN poll of likely voters taken in late September, half the respondents said the loss of jobs because of environmental regulations was a "big problem." Yet when asked to choose between protecting the environment and protecting jobs, 48% chose the environ-

Is the quality of the environment getting better?

Yes 30%

No 62%

Will the government's current environmental regulations weaken or strengthen the economy in the long run?

Weaken 23%

Strengthen 27%

No effect 36%

Was Bush's statement that he would be the "environmental President" a lie?

Yes 60%

No 28%

From a telephone poll of 1,400 adult Americans taken by U.S.C. on Sept. 22-24 by Yackelovich Clancy Shuttles. Sampling error is ± 2.5.

ment while 36% chose jobs. Forty percent of those questioned said they would be less likely to vote for a candidate if they disagreed with his environmental position even if they agreed on other major issues.

That could spell trouble for the President, whose credibility on the issue is not high. When asked whether they felt Bush lied when he said he would be the "environmental President," 60% said yes. The figures were larger among baby boomers (62%) and independents (63%). Even

among Republicans, 40% of those polled said he lied about his intentions. Ironically, the more Bush hammers at the jobs-vs.-environment issue, the more he seems to convince voters that he never meant to carry out his earlier promise.

Bush's advisers may have begun to weigh the political risks of their hard-line stance on environment. Last week White House chief of staff James Baker vetoed a proposal by Quayle's Competitiveness Council that would have allowed business-

es to use town dumps as disposal sites for certain hazardous wastes. Administration spokesmen have also begun to back away from another Competitiveness Council proposal that would vastly decrease the acreage now protected by wetlands legislation. The timing of all this could be coincidental. But it may be that, in the final stretch of his re-election campaign, Bush has concluded that one endangered species he would like to protect is his own presidency. ■

Preserving the 'Web of Life'

U.S. Sen. Al Gore, 43, is one of the most active defenders of the environment in Washington and is the author of a new book "Earth in the Balance." Recently he met with NEWSWEEK's Mary Hager to discuss his concerns about the global environment and what changes he believes are needed to preserve it. Excerpts:

HAGER: You saw the environment as an issue long before it was the popular thing to do. Why were you such an early convert?

GORE: I had a professor, Roger Revelle, who was the first person to measure CO₂ in the global atmosphere. I had tremendous respect for his mind and I believed him, not his critics. That was the initial seed. The issue itself pulled me deeper into an effort to understand it. Now, every time I pause to do a reality check about how serious this really is, the answer is, it is even more serious than we thought. It is a real challenge to our civilization to realize the enormity of what we're doing and then to imagine and organize an effective response. I'm reminded of the old parable of the blind man and the elephant. We see the problems of ozone depletion, global climate change, destruction of tropical rain forests, loss of biological species and ecological catastrophes like the Aral Sea, but it takes a little time to realize they are all part of the same underlying crisis.

What is that "same underlying crisis"?

A collision between industrial civilization as we presently organize it and the ecological system of the earth. Basically, three factors have led to this. The first is population, with a staggering increase in our lifetime. Second, the scientific and technological revolution has magnified our ability to affect the environment and changed the consequences of exploiting the earth as profoundly as nuclear weapons changed warfare. Third, and most important, a change in our way of thinking which began with the scientific revolution 350 years ago but was basically benign until our greater numbers and ecological power made it dangerous to the earth. That change was based on the assumption that we are separate from the earth. In fact, we are part of the web of life and we are recklessly endangering ourselves as we go about this process of destroying the ecological balance of the earth.

Al Gore



JOHN FICARA—NEWSWEEK

A leading U.S. senator says the environment will become a defining political issue around the world

Are you a voice in the wilderness, or are others beginning to see and say the same things?

The new way of thinking about our responsibility to the global environment is gaining momentum rapidly. Young people think this is the No. 1 issue facing the world. Europe has already modified its political equilibrium to take these issues into account, [and] Japan is moving so much more rapidly than we are. It is only a matter of time before our political system shifts and takes this into account. I think this must and will become the central organizing principle for the post-cold-war world.

How will that come about?

In most counties in my home state of Tennessee, the hottest single issue is where to put the new landfill or the new incinerator. The reason people get so intimately involved is they think it involves their backyard, and that overrides economic concerns. What is in the process of changing politically is the definition of "backyard." Young people under-

stand the global environment is part of their backyard. When the connection between the devastation of the global environment and our backyard is made emotionally, not intellectually, then the same intensity you see with local landfill issues will be brought to global environmental issues.

What role should governments play?

Affirmative measures by the nations of the world to address specific points will be necessary. I propose a global Marshall Plan, with Japanese and European capital helping to lead the way, to address those factors which cause the demographic transition, to make possible the development and dissemination of new technologies to substitute for the ones that are so harmful. A lot of these changes are ones we need to make for other reasons anyway. Pollution is waste. It is economic waste. It is environmental waste. Eliminate one, you eliminate the other. When enough people are committed, the transformation is going to be a lot easier than people think.

How close are we to that critical mass?

I think within a very few years—much closer than most people believe. The political equilibrium is about to shift.

Why did you write "Earth in the Balance"?

In hopes of hastening the arrival of that shift. I think we are in a race. I don't think we have that much time before we do irreparable damage to the ecological balance. The rate of loss of living species is now 1,000 times greater than any time in the last 65 million years. The accumulation of greenhouse gases is proceeding at a reckless pace. It is crazy to keep this up. We have to change the pattern of our political system before the earth's ecological system loses its current pattern. Civilization has prospered for the last 9,000 years within a global climate balance that has remained essentially unchanged. Civilization is carefully configured to that climate balance. If we change it suddenly, the consequences will be devastating and extremely difficult to cope with. The amount of suffering, loss of life, disruption in civilization's ability to move forward will be unimaginable. Some change is already built into the system, but the worst of it can be avoided.

GORE: ENVIRONMENTAL LEGISLATION**

Clean Air Act Amendments of 1990

Gore amendments passed by the Senate and enacted into law:

- o To stop ozone depletion by requiring the phase-out of the production and use of ozone-depleting hydrochlorofluorocarbons (HCFCs).
- o Prohibiting the export of CFC-producing technologies to countries that are not party to the Montreal Protocol, an international agreement setting phase-out deadlines for ozone-depleting chemicals.
- o Forcing polluters to reduce pollution instead of destroying neighborhoods by creating polluted "dead zones" around their plants.
- o Including carbon dioxide emissions in studies of highway pollution so that we don't just build bigger highways to deal with emission problems but instead move to reduce pollution.
- o Requiring federal procuring agencies to procure safe substitutes for ozone-depleting substances.

Strategic Environmental Research and Development Program:

Adopted in 1990 as part of the Department of Defense Authorization bill for Fiscal 1991, the SERDP brings the capabilities of the Defense Department to global environmental problems.

Also initiated efforts that led to work with CIA Director Robert Gates to make available to civilian environmental scientists previously classified scientific data about the earth that is critical to the research efforts of these scientists.

Energy:

Gore amendments enacted by the Senate as part of the 1992 energy bill:

(NOTE ALSO: Gore was a leader in the successful efforts to kill provisions that would have allowed drilling in the Arctic National Wildlife Refuge.)

- o The Gore Resolution (S. Res. 95) calling for an accelerated phaseout of ozone-destroying chemicals pursuant to the Clean Air Act amendments of 1991; the Resolution passed 96-0 in March, 1992, after being filibustered by Republicans at the end of the previous session. NOTE: The Clean Air Act amendments required the Administration to speed up the phase-out of ozone depleting chemicals if new scientific evidence demonstrated that the ozone depletion problem had gotten

worse since passage of those amendments. Despite new scientific evidence, the Administration did not act until after Gore's amendment was passed.

- o To help small businesses increase their energy efficiency and cut their energy bills by establishing energy diagnostic centers where engineering students and their professors can work with small businesses.

- o To accelerate the government's efforts to procure the most energy efficient products and to provide grant money to states to fund energy efficiency and conservation initiatives

- o Requiring the Tennessee Valley Authority of conduct least-cost planning analyses of energy supply and demand requirements (with Sen. Wirth)

Antarctica Protection:

- o Author of Public Law 101-620, a resolution calling for the protection of Antarctica from mining and development and declaring the area a global ecological commons.

- o Co-sponsor of Resolution adopted by the Senate in 1991 to ban mining in Antarctica; led to Administration's adoption of current policy to ban mining in Antarctica.

Interior Bill 1991

- o Led efforts, with Sen. Wyche Fowler, to eliminate below-cost timber sales and forest road subsidies.

- o Led efforts to retain funding for research and development joint venture funds for solar and other renewable forms of energy.

General

- o Sponsor of legislation enacted prohibiting "backhauling", a practice in which trucks carrying hazardous material in one direction are loaded with food products for return trip, often with inadequate cleanup from hazardous load.

- o As a member of the the House of Representatives, chaired hearings that revealed illegal dumping of billions of pounds of hazardous chemical waste and co-sponsored the original Superfund Act which resulted from those hearings.

- o Sponsor of resolution declaring April 22, 1990 as Earth Day, marking the 20th anniversary of the first Earth Day.

o Co-sponsored legislation, now law, providing a method of locating private and government research on environmental issues by geographic location, The Environmental Research Geographic Location Information Act.

o Held hearings and led effort, with Rep. Marilyn Lloyd of Chattanooga, to establish TIGER TEAMS to investigate environmental contamination and human health and safety concerns due to radioactive and toxic waste produced at national labs and weapons facilities.

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** NOTE: This includes ONLY legislation passed. It does not include legislation introduced by Sen. Gore or, Sen. Gore's other activities and accomplishments on these issues.

Boston Sunday Globe

SUNDAY, DECEMBER 13, 1992

THE BOSTON SUNDAY GLOBE • DECEMBER 13, 1992

Gore playing key role in shaping transition

Senator's influence seen in policy and personnel choices

By Adam Pertman
GLOBE STAFF

WASHINGTON — There have been few public sightings of Vice President-elect Al Gore since Election Day. And, when he has appeared, he's been standing silently at press conferences in Little Rock, Ark., looking every bit the traditional running mate whose primary purpose — helping his party win — has already been served.

In this case, though, the reality belies the image.

According to senior Democratic officials in Washington and Arkansas, Gore has been playing an unprecedented role during Bill Clinton's transition to power. The officials said Gore has not only been helping shape policy but also has exerted considerable influence in the selection of top-level administration nominees.

"I think it's fair to say that Al

Gore has had an impact on every Cabinet appointment ... even if it is in a modest form," said Roy M. Neel, the Tennessee senator's chief of staff.

Bruce Reed, one of Clinton's principal domestic advisers, made the same point in a separate interview in Washington. He said Clinton sought Gore's advice on a wide range of personnel and policy questions, particularly relating to foreign affairs and the environment.

Transition officials acknowledged that portraying Gore as a key player serves Clinton well. It sends a signal that the new White House will remain true to the issues Gore has championed, they said, and demonstrates that Clinton will live up to his vow to give his No. 2 unprecedented responsibilities.

At the same time, the officials insisted that there is nothing cosmetic or temporary about Gore's influence. The two running mates developed an

unusually close rapport during the fall campaign, they said, and Clinton seems intent on maintaining it after taking office next month.

"Skeptics beware, history teaches you nothing on this count," said a senior Clinton aide in Little Rock, referring to vice presidents being relegated to attending funerals or given some specific limited responsibilities.

"Besides," the aide added, "all you have to do is look at how much

*President-elect
Bill Clinton and
Al Gore 'developed
this intense
trusting
relationship on
the campaign
trail and it's
evident every day
now.'*

BRUCE REED
Clinton aide

clout Al has exercised already to understand that this is really, really different."

The clearest example of Gore's sway thus far was last week's selection of Carol Browner as administrator of the Environmental Protection Agency. Browner was a top aide in Gore's Senate office before assuming her current post as Florida's environmental enforcement chief.

Sources said that, when the initial list of prospects for the EPA job was drawn up, Browner was not even on it, but was added at her former boss' suggestion. The sources stressed that Browner rose to the top of most transition officials' lists on her own merit, and that Gore was careful not to disparage the other candidates - including former Vermont Gov. Madeleine Kunin, who most observers thought would win the EPA post.

Still, Gore got his first choice when Clinton made his final cut.

Gore also cast his shadow, albeit more faintly, during last week's discussions on nominations for key Clinton administration economic posts.

Lawrence Summers, a highly regarded Harvard economist, had been considered a top candidate for the new post of Economic Security Adviser. But, when he was chief economist at the World Bank, Summers had written a memo in which

he raised the prospect of disposing of toxic waste in developing nations.

Summers has since said he was merely offering an option, not an opinion, but Gore is known to have become wary of the economist as a result. While Gore reportedly did not try to undermine Summers' prospects for the security adviser's job, the senator's allies made their displeasure known to Clinton, and the position went to investment

banker Robert Rubin.

Besides the environment, on which Gore is considered one of the nation's authorities, officials interviewed last week said they expected his recommendations to be given particular weight in the areas of foreign policy, technology and communications. That presumably includes policy and personnel decisions affecting such pivotal Cabinet departments as state and defense, and such

powerful agencies as the Federal Communications Commission and the Federal Trade Commission.

Already, Democratic officials said, Gore has influenced public statements made by Clinton on such international issues as US involvement in Bosnia and Somalia. And, they said, his recommendations have been incorporated into the new administration's ethics guidelines and still-developing government-reorganization blueprints.

"Clinton has relied on him heavily on both people-related matters

and in areas of the federal government where Clinton has less experience," said Neel.

He pointed out that Gore is one of a handful of close Clinton advisors who discusses final decisions in the governor's mansion in Little Rock every night.

"They developed this intense trusting relationship on the campaign trail and it's evident every day now," Reed, the domestic policy aide, said. "I think you can bet that won't change once they move into the White House."

ENVIRONMENT

Remaking society to save the planet

By Ross Gelbspan
GLOBE STAFF

Like a freight train careening downhill out of control, the planet Earth seems to many scientists to be speeding toward environmental apocalypse.

Many despair of doing anything about it, but Sen. Al Gore (D-Tenn.), a 1988 presidential contender and a leader in the US Senate, has decided to throw his political future across the tracks.

He has done so in a new book that calls on Americans, and the world, to apply the brakes by embracing individual, societal and economic life-style changes that would seem sweeping and radical coming from the environmental establishment, let alone from the heart of the political mainstream.

Its call for restructuring modern civilization around the principle of global environmental redemption proposes strategies far more radical on Capitol Hill than anything publicly espoused by many environmental groups, concerned about their credibility in the hardball world of political compromise.

Gore's interest in environmental issues is nothing new. Last week, the Senate voted 96 to 0 to adopt his resolution to speed the phase-out of ozone-depleting chemicals. And colleagues expect him to vigor-

Gore asks radical global fix

ously oppose an administration-sponsored energy bill that would create hundreds of oil, coal and nuclear power plants over the next four decades while doing little to promote conservation and renewable energy sources.

But those initiatives pale in the face of his global blueprint, which includes a "Global Marshall Plan" to stabilize skyrocketing population and halt deforestation and destructive agricultural practices in developing countries; to switch from oil, coal and nuclear energy to solar, wind and other renewables; impose stringent taxes on virgin materials to force producers to recycle and reuse products; and change the way national budgets are calculated to reflect the true costs of resource depletion

and pollution.

In "Earth in the Balance: Ecology and the Human Spirit," Gore makes the case for such steps by relentlessly cataloguing a list of accelerating planetary catastrophes — global warming, climate change, sea level rise, deforestation, skyrocketing population growth — that threaten the survival of civilization.

In a particularly impolitic chapter, Gore, the scion of one of Tennessee's leading Democratic families, warns Americans they are fundamentally alienated from nature and their own experience, a split that has led to what he calls a "dysfunctional civilization" marked by addictive con-

GORE, Page 33



SEN. AL GORE

'WE'RE NEARING A THRESHOLD BEYOND WHICH PEOPLE WILL REALIZE THAT THIS RIDICULOUS AND ABSURD FRENZY OF EXPLOITATION IS REALLY A DUMB PATIENT. WHEN THAT HAPPENS, THINGS THAT TODAY SEEM POLITICALLY IMPOSSIBLE WILL THEN BE POLITICALLY IMPERATIVE.'

AL GORE

U.S. Senator

A *January* meeting of *Forest for U.S.A.*, Dec. 11-12, 1964, at the University of Illinois.

He expressed disdain for those who say the global danger is being exaggerated. He specifically challenged a small minority of scientists, actively supported by the Bush Administration, who deny there is a crisis because of scientific uncertainties about patterns of variation and specific causes and effects. Gore compared them to tobacco company scientists who cite the lack of proven specific pathways by which smoking causes cancer to deny the overwhelming evidence of such a link.

Just as the United States rebuilt Europe after World War II in a policy of enlightened self-interest, Gore's book urges the developed nations to embark on a "Global Marshall Plan" to eliminate the buildup of greenhouse gases by switching to renewable, non-polluting energy sources such as solar, wind and photovoltaic cells. It also calls for drastic reduction in the use of industrial chemicals and soil-depleting chemical-intensive agriculture. And it calls on the world to provide education, infant health care and contraceptives to women in poor countries to check population growth.

Factoring in hidden costs

Key to his plan is worldwide adoption of an economic budgeting system that includes the hidden costs of pollution and resource depletion in calculating the Gross National Product, an approach advocated by several economists who say the current system masks massive costs that then fall on future generations.

Gore, again echoing economists, says that by reducing pollution and increasing energy efficiency, firms actually increase competitiveness by finding ways to improve production, maximize the ingenuity of their workforces and cut waste.

Observers in Congress note that Gore has long had an environmental focus, focusing on toxic waste problems as a young congressman and helping establish the 42-nation Interparliamentary Conference on the Global Environment, an international group to monitor global climate change.

But, Gore says, it was a convergence of seismic personal changes, marked by deep frustration and pain, that prompted him to write his book. During his aborted 1988 presidential run, he recalled, he gave speech after speech about environmental problems "only to pick up the newspapers the next day and see not one reference to those speeches."

"I started to wonder whether those issues... were peripheral after all. I began to doubt my own political judgment, so I began to ask the pollsters... what they thought I ought to talk about," he wrote. As a result, "I discussed what everybody else discussed, which too often was a... list of what insiders agree are 'the issues'."

Then, in 1989, he says, he underwent a period of soul-searching after his six-year-old son was hit and nearly killed by a car. During the weeks he and his wife spent in the hospital caring for their child, Gore wrote, he realized "the change that sought me out in the middle of my life... gave me a new sense of urgency about those things I value the most."

A horrifying tableau

The result, "Earth in the Balance" (published by Houghton Mifflin), presents a horrifying tableau of accelerating, unrestrained destruction that threatens in the next few decades to stress the global environment to the breaking point.

It foresees massive climate change marked by wild increases in

droughts, flood and storms, propelled by a growing atmospheric overload of carbon dioxide and other "greenhouse gases." Those changes, accompanied by rising sea levels, are being accelerated by the ferocious destruction of forests that consume carbon dioxide and replenish our oxygen supply.

It also forecasts rapid wilting of the food supply under the pressure of wasteful and destructive agricultural practices.

And it suggests the inevitability of overpopulation coming to an abrupt halt in a massive population crash driven by drought, famine, deforestation or other causes.

Among other findings Gore cites to support his alarm:

- While the global average temperature dropped by slightly more than 1.8 degrees Fahrenheit during the Earth's last "little" ice age between 1550 and 1850, scientists expect it to increase 4.5 to 7.2 degrees over the next 50 years.

- Atmospheric concentrations of carbon dioxide have ranged from 200 to 300 parts per million during the last two ice ages, but is expected to skyrocket to 600 ppm in 50 years.

- The world's tropical rain forests, which consume carbon dioxide and provide homes to millions of species, are being destroyed at the rate of one football field per second, more than one Tennessee per year.

- Partly as a result, wildlife species are being destroyed a thousand times faster than at any time in history.

- Earth's population, which grew to 2 billion between the dawn of human history and 1945, will more than quadruple, to 9 billion, by 2020.

At the same time, Gore says, there has been a destruction of the

internal ecology or human feelings and responses by the numbing power of alienation and denial, which has deafened leaders and paralyzed many of the world's people.

On one level, he wrote, politicians, news editors and individuals who refuse to address the threat "are really saying they simply do not want to think about the disruption that would accompany any serious effort to confront the problem."

At a deeper level, the apathy is caused by "dysfunctional patterns of behavior" resulting from losing touch with humanity's natural roots.

"People object when their backyards are threatened by a new landfill or incinerator. But people's definition of backyard is changing."

SEN. AL GORE

Driven to consume

The source of the crisis lies in our "addiction to the consumption of the Earth itself," he wrote, an addiction that "distracts us from the pain of what we have lost: a direct experience of our connection to the... natural world..."

That addiction must be faced before it can be curbed, he asserts, for only then "can we recognize the destructive impact" of our habits. That is the first step, "toward mourning what we have lost, healing the damage we have done to the Earth and to our civilization, and coming to terms with... what it means to be a steward of the Earth."

ST. LOUIS POST-DISPATCH

TUESDAY, SEPTEMBER 1, 1992

EDITORIALS

Environmental Distortions

Among his targets for the fall re-election campaign, Vice President Dan Quayle has chosen "Earth In The Balance," the recent and now controversial book by his opposite number, Sen. Al Gore. Mr. Gore, the Democratic nominee for vice president, has written of the difficulties of sustaining life on this planet at the present rate of consumption, particularly in highly industrialized countries like the United States.

Here is how Mr. Quayle summed up the differences in the environmental philosophies of the Republican and Democratic parties. In a speech last week to the Economic Club of Grand Rapids, Mich., Mr. Quayle said: "We envision man as the harvester, working with the Earth to raise up homes and cities, respecting nature but shaping it to legitimate ends. . . . They [Democrats] view man more as an uninvited guest here on Earth, settling down and consuming resources to which he has no right."

What a gross oversimplification. The modern American environmental movement began with such Republicans as Theodore Roosevelt, who believed in setting aside precious resources like the national parks for future generations to enjoy. Many moderate Republicans who recoil at the existence of the likes of Dan Quayle in their party long have worked to protect and preserve the environment for one and all. Other Republicans have embraced the concept of conservation to save trees, minerals, wildlife and vegetation.

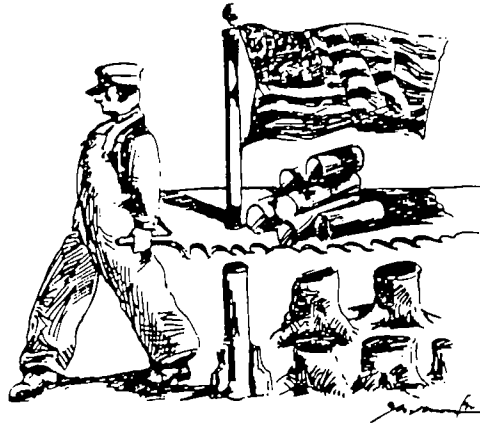
But those Republicans are not in control of the

party. Those in control now cast the issue as environmental protection versus jobs, though that is seldom the case. And too often they are willing to allow industry to pass on the cost of environmental degradation to the general public.

Conversely, Democrats across the board do not believe that human beings and economic development are incompatible. But many do believe that great care must be given when forests are felled and lands mined, lest permanent damage to the environment be done.

They believe, like moderate Republicans, that scarce resources should be husbanded, that wastes that come from economic inefficiencies are wastes that cannot be sustained. And they realize that small, thoughtful changes in living habits can sometimes result in great savings for society, whether that be by a fuel tax that encourages greater efficiency or by insulation standards that make homes cheaper to heat and cool.

Mr. Gore's views are neither new nor extreme, but he does argue that sometimes painful measures may have to be taken by government and individuals to curtail activities by human beings that are counterproductive in the long run. And part of the burden will fall on Americans, who consume more per capita in fuel, food and raw materials than any other nationality in the world, now or in the past. Mr. Gore's message is complex. Unfortunately, that makes it vulnerable to the cheap distortions of a Dan Quayle.



The Philadelphia Inquirer

Wednesday, September 16, 1992

Saving earth for and from mankind

By JAMES R. SPOTILA

Sen. Al Gore's *Earth in the Balance* is the most important book of the decade, not because it contains the answer, but because it focuses on the question. How do we face a global environmental crisis that threatens civilization as we know it?

If we continue our neglect of ecological issues, the end will not come with a bang, as in a nuclear war, but will arrive imperceptibly. Our grandchildren might not enjoy the clean air and water, the protective sky and changing seasons that we expect as our birthright.

Sen. Gore points out in accessible language that if we do not begin to address that growing environmental threat now, we may be able to accumulate short-term profits for a while, but our long-term legacy will be a world barren of nature due to a depleted ozone shield.

Gore exhorts us to change our ways of thinking and of doing business.

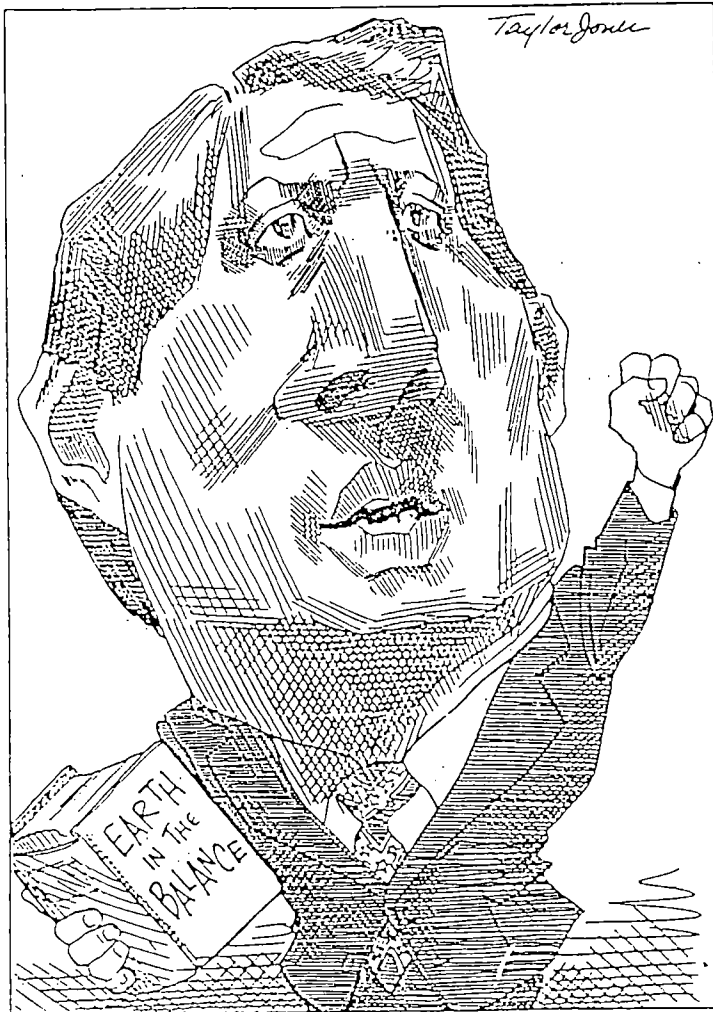
Since these conclusions have long been obvious to environmental scientists, it was with more than a little skepticism that I began to read Sen. Gore's book. To my surprise, I was compelled not only by his clear presentation of the data on global warming, ozone depletion and other environmental horror stories, but also by his proposed solution to the crisis — A Global Marshall Plan.

Gore calls for improved automobile technology — such as the Japanese ceramic engine that runs at higher temperatures and thus minimizes pollution — because our cars with their outdated engines pose "a mortal threat to the security of every nation that is more deadly than that of any military enemy we are ever again likely to confront." He's right. A 2-to-5 degree Celsius rise in global temperature poses a greater danger to the U.S. than Iraq does.

There is nothing more important to our future than a safe and sustainable environment. Without it there is no economy and our civilization will fade into oblivion.

For America to maintain a viable environment, Sen. Gore advocates government planning like that used to build up our military strength during World War II and the Cold War.

Over the last 12 years our government has minimized our environmental crisis while maximizing short-term economic gains. The Reagan and Bush administrations have dismantled our environmental safeguards, cancelled ecological studies, and gutted the Environmental Protection Agency (EPA). Though the savings and loan bailout and budget deficit are on the national agenda, if we fail to take action on the environment, the costs of the "Environmental Debacle" will dwarf both of these problems.



ALBERT GORE

Los Angeles Times / TAYLOR JONES

Sen. Gore makes clear we must act to change our approach to the environment. Not to act now would be to bequeath our grandchildren a life so filled with disease and famine that they would look back and rue the selfish actions we are taking today.

Sen. Gore states, "We tolerate ... the violation of the rights of those who will come after us. As we strip-mine the earth at a completely unsustainable rate, we are making it impossible for our children's children to have a standard of living even remotely similar to ours."

He also contends, "With the future so open to doubt, we routinely choose to indulge our own generation at the expense of all who will follow. We enshrine the self as the unit of ethical account, separate and distinct not just from the natural world — but even from a sense of obligation to others — not just others in future generations, but increasingly even to others in the same generation; and not just those in distant lands, but increasingly even in our own."

How can we have a healthy economy if we do not have a healthy environment? One of the most prescient actions of late was America's passage clean water and air legislation during the 1960's and 1970's. We only have to compare our environment to that of eastern Europe to appreciate the horror we avoided and the high quality of life we obtained by those actions. Money invested in that effort paid for itself in jobs and quality of life a hundred times over.

The question is not, as Gore's critics would have it, which do you want, jobs or a clean environment? The question is, how do we create jobs that contribute to maintaining a sustainable and safe environment? Since 1970 many companies have grown, created jobs and prospered by combining concern for environmental quality with technological innovation.

The 3-M company improved profits with its Pollution Prevention Pays program. Xerox and Dow instituted similar measures. Here in the Delaware Valley, Betz Laboratories, Roy F. Weston, Inc. and Environmental Tectonics Corp. have grown to employ over 6,000 blue collar, technical and scientific workers. They have demonstrated that caring for the environment and creating jobs are compatible.

Gore sets six strategic goals for the Global Marshall Plan.

- Stabilizing the world population.
- Rapid creation and development of environmentally appropriate technologies.
- A comprehensive change in the economic "rules of the road" by which we measure the impact of our decisions on the environment.

■ The negotiation and approval of a new generation of international agreements to make the overall plan a success.

■ The establishment of a cooperative plan for educating the world's citizens about our global environment.

■ The establishment, especially in the developing world, of the social and political conditions most conducive to the emergence of sustainable societies.

An environmental scientist could not have said it better.

After 12 years of undermining support of family centered programs, the Republicans are talking to us about family values. Don't they think family values also include ensuring that our grandchildren have clean air to breathe and clean water to drink?

If you care about your grandchildren, read Gore's book.

James R. Spotila is a professor of environmental science at Drexel University.

REVIEWS

BOOKS

A Crisis as Real as Rain

TITLE: *EARTH IN THE BALANCE*

AUTHOR: AL GORE

PUBLISHER: HOUGHTON MIFFLIN; 407

PAGES: \$22.95

THE BOTTOM LINE: *A work of intelligence and passionate authenticity.*

By LANCE MORROW

SENATOR AL GORE HAD JUST turned 40 years old. His presidential campaign had broken up in the primaries the previous spring. Then, as he reports, "one afternoon in April 1989, I walked out of a baseball stadium and saw my son, Albert, then six years old, get hit by a car, fly thirty feet through the air and scrape along the pavement another twenty feet

until he came to rest in a gutter." The child, at first near death, eventually recovered. It was in his son's hospital room in Baltimore that Gore began writing *Earth in the Balance*.

Since the book arises in part from a moment of personal crisis, it speaks with a certain passionate authenticity, a ring of the unfakable that is rare enough in the (usually ghostwritten) outpourings of politicians. The American public, much afflicted by sound bites, has all but abandoned hope for intelligent life in Washington. It may be impressed by Gore's sustained intellectual concentration and mastery of his subject, the environment. Gore has studied it a while. In the 1988 campaign, the Senator held the wedding guests with his glittering eye and talked about such obscurities as the greenhouse effect and the thinning ozone. Another candidate said he sounded as if he were running for national scientist.

The subjects are less obscure now. In *Earth in the Balance* Gore writes, "The global environmental crisis is, as we say in Tennessee, real as rain, and I cannot stand the thought of leaving my children with a degraded earth and a diminished future."

Gore has produced a labor of statesmanship, evangelism and scientific exposition. He does not so much break new ground as organize a wide variety of material and experience to state the case of environmental urgency and the need for change, for what he calls a "Global Marshall Plan." He has digested books, made friends with experts and traveled. Gore went, for example, to the Aral Sea in Central Asia—10 years ago the fourth largest inland sea in the world, now dead, its fishing fleets stranded surreally in dry desert. The water that once fed the Aral was diverted in an ill-considered irrigation project to grow cotton. Gore traveled to the vanishing Amazon

rain forest and to the globe's other environmental Stations of the Cross. He knows too much, however, to indulge in mere sentimentalism about Earth-Motherhood, or to join a doctrinaire rush to simplification.

In drawing a line connecting the individual to the global, Gore here and there sounds as if his inner Ancient Mariner had lingered too long in adult-children seminars with John Bradshaw, and humankind might 12-step the earth green again. Still, the vocabularies of the recovery movement open interesting windows upon a civilization that is dysfunctional, much given to denial, addiction, co-dependency and brutal nature abuse.

If the future (to use Gore-esque imagery) remains as dark as a mine shaft, humankind has at least begun to notice the alarming accumulation of dead canaries about its feet. In part because of his son's accident—and perhaps in part because of George Bush's overwhelming popularity in the polls after Desert Storm—Al Gore decided to sit out the 1992 campaign. Instead of Gore for President, the public has his book, which is itself an act of leadership. ■

TELEVISION

Graduating With Honors

SHOW: *THE COSBY SHOW*

TIME: THURSDAY, APRIL 30, 8 P.M. EDT, NBC, FOR THE LAST TIME

THE BOTTOM LINE: *The most successful sitcom of the '80s makes a graceful exit.*

By RICHARD ZOGLIN

NOTHING ON TV AGES FASTER than a family show. The regulars at the *Cheers* bar or the *M*A*S*H* unit can stick around for years, with only occasional cast changes to accommodate stars who want to get into movies. But kids have a bad habit of growing up. Anyone tuning in after a few years' absence to this week's final episode of *The Cosby Show* may get a shock. Theo (Malcolm-Jamal Warner), a junior-high student when the series began, is graduating from college. Vanessa (Tempestt Bledsoe), once a pudgy preteen, is in college too, and has weathered a broken engagement. Cute little Rudy (Keshia Knight Pulliam) has ceded the spotlight to a passel of even cuter, littler kids: Olivia, 6, stepdaughter of No. 2 daughter Denise (who



CYNTHIA JOHNSON FOR TIME

Gore at home near Washington: his travels took him to the Aral Sea, now dead, and other disasters

Sound Environment, Sound Economy

By AL GORE

Special to The National Law Journal

THE AMERICAN people are being asked to choose between protecting our environment and strengthening our economy. That's the choice President George Bush and Vice President Dan Quayle are asking us to make. It is not just short-sighted, it is irresponsible. And it is just plain wrong.

Fortunately, the American people are getting a second opinion before accepting this false choice as true. They're willing to work for a strong economy. And because they care about protecting the environment they will leave their children, they're willing to work to clean it up.

The simple truth is that protecting our environment means new business and increasing profits. Protecting our environment ensures that the United States will remain competitive in the international marketplace in the future. It means strengthening our economy. It means meeting the challenge from our competitors, such as Germany and Japan and others already moving to secure their place and their profits from these growing markets.

If we fail to act, we lose. We lose jobs, we lose opportunities, we lose our natural resources and the brighter future every parent hopes to offer their child.

For example, during negotiations on a climate convention signed at the June International Earth Summit in Rio de Janeiro, Brazil, the administra-

tion argued that the United States could not afford to stabilize emissions of carbon dioxide, the major cause of global warming, at 1990 levels by the year 2000. That argument ignored the administration's own data and analyses showing that we can not only afford to stabilize emissions through voluntary energy conservation and other measures, but we can do it at a profit. We can enhance business profits and protect our environment *at the same time*.

What was once called too expensive is now called a bargain too good to pass up.

We have had a difficult time in the past coming to grips with the fantastic new powers we've gained from the

Continued on page 18

A Clean World Is Good for Business

Continued from page 17

technologies that drive our industrial society. Just as nuclear weapons transformed the consequences of all-out warfare, so thousands of new technologies that magnify our ability to exploit the earth have transformed our relationship with the earth.

At the dawning of the nuclear age, Albert Einstein said, "Everything has changed, except our way of thinking." During the last few decades, human beings have tried to come to grips with a new way of thinking about warfare. We have not fully acknowledged the debt that all humankind owes to Brazil and Argentina and other nations in South America that had the courage to abandon this technology of nuclear weapons and make a pact to stop the march that other nations began toward nuclear weaponry. If such progress can be made in the area of war technology, we can certainly move forward together to improve our management of industrial technology.

So now we face the necessity of arriving at a new way of thinking about our relationship to technologies for exploiting the earth. Our successful start in dealing with CFCs, or chlorofluorocarbons, give us cause for hope because agreements have been reached by most nations of the world that will eventually result in their phaseout. We must build on that success by developing a new partnership between North

and South, industrial countries and developing countries, that will work to counter global warming; to preserve our dwindling forest resources and other critical ecosystems; and to clean our air, our fresh-water resources and our oceans.

Here at home, we must accelerate the development of new technologies that foster economic progress without environmental destruction. We must commit to using and promoting renewable energy technologies and work to move these programs from the bottom of the list of priorities to the top. We can start by taking advantage of the wealth of expertise and talent in our national labs and other federal facilities, bringing them together with the private sector to produce these new technologies.

New Technologies

Policies, technologies and processes that prevent or stop pollution at its source rather than clean it up later offer unprecedented business opportunities. Last year, Northern Telecom Ltd., which has its American headquarters in Nashville, Tenn., became the first major electronics company to eliminate the cleaning solvent CFC-113 from its manufacturing operations. The company used available technology, working with its customers and vendors to create alternatives to the CFC solvent. Northern Telecom estimates that the use of the alternative

process will prevent nearly 9,000 tons of CFCs from being released over the next eight years, while generating savings of \$50 million.

Companies with the best environmental strategies will lead business in the 21st century. They are among the most competitive and profitable. Japan has already recognized and seized upon this economic opportunity through energy efficiency and also by investing in the future.

For example, Japan's Ministry of International Trade & Industry began work in 1990 to create the Research Institute of Innovative Technology for the Earth, intended to develop environmental technologies. In addition to \$80 million in seed money from the ministry, Japanese industry invested \$45 million in the first year of operation. Japanese companies have recognized that huge profits can be made by developing and using environmental technology.

The American people know, too, that we can both save the environment and strengthen the economy. They know we do not have to sacrifice economic stability and jobs to protect the world around us. It can and must be done.

The American people want from their leaders vision and courage, understanding, compassion and real commitment on these issues. They expect and deserve leaders who will amplify their voices, not overpower them.

Green giant

Looking at Al Gore's legislative record, one would hardly judge him an "environmental extremist," the label the White House has tried to pin on him. Though he has been a vocal and effective critic of the Bush Administration's environmental failures, and though greens support him enthusiastically, his ecological voting record puts him well into the middle of the pack of Democratic senators. Indeed, Gore's lifetime grade from the League of Conservation Voters, a consortium of mainstream environmental groups, is a middling seventy-seven out of a possible 100. Early in his congressional career, in fact, Gore failed one of the environmentalists' litmus test issues of the late '70s by voting against protecting the endangered snail darter in favor of constructing the Tellico dam in his home state of Tennessee.

Critics in the Bush Administration want it both ways. While branding Gore an extremist, they accuse him of not being an effective legislator on the issues. "Quite frankly, there is not much there," said Michael Deland, chairman of the White House Council on Environmental Quality. "There has been a lot of rhetoric but not much in the way of performance." Administration officials point out that Gore was not a major player on many of the most important environmental bills taken up by recent Congresses. These include the Clean Air Act amendments of 1990, the 1990 farm bill, the national energy strategy, the highway bill, the elevation of the EPA to cabinet level, the oil pollution act, nuclear liability legislation, and others. Indeed, even some environmental lobbyists say Gore has been less influential than he could be because he does not serve on the Senate Environment and Public Works Committee or any other key committee concerned with environmental matters.

In fact, Gore's record is substantial. He was the author of several major

amendments of the 1990 Clean Air Act re-authorization, including requiring the phaseout of ozone-depleting hydrochlorofluorocarbons. His proposal for a "strategic environmental research and development program" to bring the research resources of the Defense Department to bear on global environmental problems was adopted in 1990. He was the author of a resolution calling for the protection of Antarctica from mining and other development. He was also a leader of the successful effort to bar oil development from the Arctic National Wildlife Refuge. He has been particularly active in promoting environmentally sound technology to help restore the nation's competitiveness in international markets, successfully pushing, for example, for the creation of a new national network of high-speed information "super-highways" that would link powerful computers with schools and research centers. Since his vote on the snail darter, Gore "has worked strongly for the protection for species and habitat," according to the League of Conservation Voters. And as a member of the House in the late '70s, Gore presided over a landmark investigation that disclosed the magnitude of the nation's hazardous waste problem. Shortly thereafter, he co-sponsored the Superfund bill to clean up toxic waste sites.

Gore is not a member of "The Club," the coterie of influential senators who cut deals over legislation. But despite his lack of insider status, he is without question the most prominent environmental activist in the United States Congress. His leadership stems from his demonstrated ability to recognize, master, and articulate emerging issues. He has been well ahead of the curve on issues from hazardous waste in the '70s to global warming, destruction of the earth's protective ozone layer, and the disappearance of species in the '80s and '90s. *Earth in the Balance*, Gore's best-selling book on the global environment, is a meticulously researched, careful analysis of some of the most important geopolitical issues of our

time. What is more, the book offers a long-range strategy for asserting American leadership in a new system of collective security built around the "central organizing principle" of environmentally sustainable economic development.

The Bush-Quayle campaign has used the book as exhibit A for its charges that Gore is an extremist. Quayle has called it the Democratic "manifesto" and said that following its recommendations would require sharp increases in taxes and lose thousands of jobs. The Republicans are particularly shrill about Gore's suggestions on the use of carbon taxes to encourage the reduced consumption of fossil fuels, hoping once again to stimulate a knee-jerk reaction to the word "tax." The Clinton campaign has handled the book rather gingerly, particularly the carbon tax idea, which it has described as only a suggestion for study. In fact, Gore's own words unmistakably show that he thinks it would be a good idea. But he also states unequivocally that he is not advocating a tax increase. Under the plan, other taxes would be lowered commensurately. As for the idea of building a new system of collective security around sustainable development, it was embraced by almost all governments at the Earth Summit in Rio. If Gore is an extremist for proposing it, so are the leaders of Germany, Japan, and other industrialized democracies.

The good news for Gore is that the extremist tag does not appear to be sucking, even within the Administration. Gore "cares a lot and knows a lot about the issues," EPA administrator William K. Reilly said in a recent television interview, adding, "I don't think he's an environmental extremist." Of course, within the administration, Reilly's a bit of a fringe figure himself.

PHILIP SHABECOFF

Philip Shabecoff's book on the environmental movement, *A Fierce Green Fire*, will be published in January by Hill & Wang.

THE ECOLOGY OF SURVIVAL

By Al Gore

Theories about history are built on sand. Yet millions have died believing in their ultimate truth. It's because we have paid such a high price for historical theorizing that we can ill afford to lose our perspective now, or to stop thinking about where we've been and what it tells us about where we're going. To paraphrase Santayana, those who cannot remember the past ought to be condemned to reread it.

Seventy-five years, the measure of one magazine, is now the measure of one human lifetime—the number of years an American child born today can expect to live. Looking back 75 years, we can accept or ignore any number of political, cultural, or strategic lessons. Looking ahead into the life of that child, however, we see two indisputable patterns. With the invention of nuclear weapons we changed the character of warfare in ways that must preclude any conflict on the scale of the one that began in 1914. That lesson is widely understood, and we have some basis for hoping that it will guide our future affairs. The second dramatic change has not yet been so widely accepted. Humankind has suddenly entered into a new relationship with the planet Earth. Our survival depends upon our capacity to grasp, and quickly, the extent to which the current pattern of world civilization threatens the ecological system that sustains life as we know it.

From this side of the Atlantic, at least, the future looked better in 1914. Back then America didn't need a coup in Panama; that year we opened the Canal. Productivity growth in the United States was almost too fast to measure. In the fall of 1913 a Model T came off the assembly line at Henry Ford's new Highland Park plant every 12 hours. By the spring of 1914 that plant was producing one car every hour. The world environment was as untrampled as the poppies in Flanders Fields. The biggest threat to the rain forest was Tarzan, created that year by Edgar Rice Burroughs.

From politics to art, the world was breaking loose from the old order. The acceleration of history was already well under way. Einstein's theory of relativity had jolted science. Cubism was fracturing the way artists interpreted the world. Ancient dynasties and im-

mense empires began to die with the Archduke Ferdinand. The World War hardly made the world safe for democracy, but it did put the foes of democracy on notice. The period since then represents a succession of struggles between democratic powers and tyranny in all its guises. In 1914, as Europe descended into carnage, by far the greater number of the world's peoples lived under tyrannies. But of the major nations that went to war in Europe, only the established democracies survived with their political systems intact. The interwar years were marked by philosophical as well as geopolitical struggles on a global scale, with the ideologies of fascism, communism, and democracy in contention. In World War II, not only was fascism defeated; its exemplars underwent apparently permanent societal conversions, from which they emerged as democracies themselves. Now we appear to be experiencing the rapid dissolution of Communist tyranny. The process is advancing in Europe and perhaps gathering strength in Asia, the result of irresistible internal forces that can be set back but not permanently stopped.

In the developing worlds of Latin America, Africa, and Asia, the battle between democratic and tyrannical forms of government has been less decisive. Nevertheless, over the last decade the trend has been toward democratic forms, from Argentina and Brazil to the Philippines. Looking at this pattern, some conclude that humankind is maturing out of tutelage, throwing off submission to the arbitrary rule of those who claim legitimacy by divine right or historical "law" and embracing instead the self-rule that derives its legitimacy from the will of the electorate. Perhaps so. But experience ought to make us wary of premature declarations of victory, and we should certainly reject the idea that we have arrived at the end of political history. The human imagination is much too fertile for that, and the human capacity for inventing systems of political belief has not exhausted itself. We can expect that "isms" will continue to appear, displacing others in the hearts and minds of millions, over cycles of time that may run from decades to centuries and even to millennia.

Yet because of the events and accomplishments of the last 75 years, there are indeed critical, and permanent, new factors in the life of humanity. These relate to the physical world, whose constants are beyond the

AL GORE is a U.S. Senator from Tennessee.

power of ideological manipulation. We have, in the course of a single life span, managed to grasp the levers of our own destruction: first, in the form of nuclear weapons; and second, in the form of the industrial destruction of the biosphere, which has begun to move ahead at geometric rates of increase. When you consider the relationship of the human species to the planet Earth, not much change is visible in a single year, in a single nation. Yet if you look at the entire pattern of that relationship from the beginning of the modern era in 1914 until today, the contrast is starkly clear.

In 422 years, from the time of Christopher Columbus until 1914, world population tripled, to 1.6 billion. In the last 75 years it has tripled again, to 5.2 billion. We are told that in the next 75 years it will double and perhaps even triple once more. Nearly every index of the impact of modern industrial society follows the same pattern of sudden, unprecedented acceleration. Americans consumed around 40 billion kilowatt-hours of electricity in 1914. Last year we used 60 times that much. U.S. production of synthetic organic chemicals (from PCBs to pesticides to plastics) has gone from almost nothing to 225 billion pounds per year—half a ton for every American. The world's fossil fuel use has increased ten times over, and with it, carbon dioxide has flooded the Earth's atmosphere. Other greenhouse gases have soared upward at similar rates: U.S. nitrogen oxide emissions are up 800 percent since 1914; methane concentrations have nearly doubled; and the world's emissions of chlorofluorocarbons, which had not yet been invented in 1914, have increased by 80 times since World War II, and are still doubling every decade, posing a deadly threat to the Earth's protective ozone shield.

The hole in the ozone layer is only the most widely accepted manifestation of a much broader challenge to the Earth's environment. We are destroying forest land at the rate of one acre per second; we are poisoning our rivers, lakes, groundwater, and oceans; we are causing living species to be destroyed at a rate 1,000

times greater than at any time in the last 65 million years; we are filling the atmosphere with gaseous wastes that threaten changes to the climatic system in the next 75 years as large as those that accompanied the ice ages over hundreds of thousands of years. These dramatic changes are taking place not only because the human population is surging and our standard of living has increased, but because we tolerate environmental vandalism on a global scale.

For 75 years the price we would have to pay for our actions has seemed impossibly remote. Only now are we beginning to see, in Ivan Ilych's phrase, "the

shadow our future throws." Whether we look forward in hopes of glimpsing what the future holds or gaze backward at the events that have dominated the world since 1914, we see something that resembles one of those artist's depictions of relativity theory, with time and space curved like a checkerboard grid painted by Salvador Dali. Our political awareness of the world is shaped and bent by events. Vast calamities such as the world wars exert a powerful gravitational pull on every idea we have about the world around us. And, just as in Einstein's theory, future events can exert the same gravitational pull on our thinking as events in the past. The political will to slow down the nuclear arms race came from the

feeling that we were being pulled toward a future we had never seen but didn't want. Now, as we are being drawn toward the brink of ecological collapse, we must be willing to consider drastic ecological action.

There is no way for humanity to forget its skills for self-destruction, by war upon each other or by war upon the environment. In an exchange of Promethean proportions, we have acquired deadly knowledge that we can never lose but must learn to keep under control forever. That is the new and permanent point of departure for political wisdom. And if we are to succeed in keeping civilization intact, it is clear that oneism must be revived and renewed: globalism—by which I mean not some kind of world order prescribed and imposed

Thorstein Veblen Reconsidered *George Charney*

THE NEW REPUBLIC

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COVER, JANUARY 22, 1972

from above, but rather a sense of responsibility for the good order of the world, rising upward from all of its peoples, and ultimately manifesting itself in the behavior of their governments, both domestically and in international relations.

A new globalism cannot be based on some transformation of human nature, by which people will be endowed with new virtues of foresight and restraint. In the last 75 years we have had enough of efforts to create the New Man in one image or another. Jefferson's educated citizenry will have to suffice. The globalism we need can develop out of roots already universally present. It will be an enlightened, informed extension of our desire to survive, and of our often even more intense desire to provide for the survival and well-being of our children and grandchildren. Globalism will be marked by the sense that if our affairs are conducted on the basis of an unlimited struggle for supremacy—whether among nations or over nature—the result will be an increasingly high risk of almost immeasurable loss for all. It will be marked also by a sense that at some level, cooperation secures for all of us what strife cannot.

Mikhail Gorbachev now speaks as an advocate of a globalist approach based on mutual consent, rather than hegemony. It is certainly a revolution of sorts to hear such things from a Soviet leader. But it is well to remember that Gorbachev has at best caught up with the doctrine of collective security as propounded by Woodrow Wilson in 1918 and again by Franklin Roosevelt in 1945.

The essence of the doctrine of collective security is that security is indivisible and mutual: it must be provided for all, by actions to which all must contribute, or it exists for no one. That is certainly the lesson we must apply as we struggle to redefine our security relationship in military terms. Reductions of strategic and conventional weapons are desirable, but not in the abstract. They must seek a result in which the residual forces are perceived by all concerned parties to be stable, in the sense of lacking the capacity for decisive surprise. And reductions must be carried out in a political context that buttresses the expectation of peace and justifies diminished preparation for war.

But the notion of mutual security must now move from an exclusive concern with security as an issue of peace or war to a definition of security that includes the global environment. With that in mind, I have proposed a Strategic Environment Initiative (SEI). Let's face it: the Strategic Defense Initiative can't assure our survival for the next 75 years. A Strategic Environment Initiative might. I am no admirer of SDI, but one doesn't have to be an admirer to recognize that it drew together previously scattered facilities and resources and that it attracted a generous share of the government's budget for research and development. We need to approach the technological challenge of environmental protection and economic growth with at least the same intensity—and with comparable or greater levels of funding.

If we continue our current pattern of technology and production, we will be able to achieve economic growth in the near term only at the cost of massive environmen-

tal disorder in the not so distant future. For the developing world, the problems of reconciling economic growth and environmental protection are compounded by high rates of population growth and a massive debt burden. Yet the cooperation of Third World nations is crucial to controlling problems as vast as global warming. Their share of greenhouse gas emissions from fossil fuels could grow from about 20 percent today to as much as 60 percent by 2050. A Strategic Environment Initiative would promote environmentally sustainable development by identifying and spreading new technologies to developing countries, where 95 percent of world population growth will take place during the next century. Here in the United States, the Strategic Environment Initiative must modernize technologies and practices in every economic sector, from more fuel-efficient cars and energy-efficient appliances to manufacturing that relies on recycled material, to a second green revolution requiring fewer fertilizers and pesticides. The emerging consensus for environmental protection is opening the door to solutions once considered politically impossible.

It will not be enough, however, to change our laws, policies, and programs. We must also change the way we think about ourselves, our children, and our future. For a very long time, we have seen ourselves as separate from the world around us. At least since the beginning of the scientific method, and probably since Aristotle, we have seen nature as the object of our experiments, exploitation, and dominion. As scientists reflected on Einstein's revolution, they discovered that the act of observing alters what is observed. Heisenberg established that "uncertainty principle" in 1923. But its philosophical application is not limited to the subatomic world he described. In a kind of Heisenberg Principle writ large, we have altered—without realizing it—our relationship to nature itself. We must now create a new pattern of thinking in which we once again see ourselves as a part of the ecological system in which we live. We have lost, so to speak, our eco-librium.

How can we gain sufficient distance from ourselves to see a pattern that contains us in a larger context? My own religious faith teaches me that while we are given dominion over the Earth, we also are required to be good stewards of the Earth. If our actions cause the destruction of half the living species God put on this Earth during our lifetimes, we will have failed in the responsibility of stewardship. Are those actions, because of their result, "evil"? The answer depends not upon the everyday nature of the actions, but upon our knowledge of their consequences. For the individual actions that collectively produce the world's environmental evil are indeed banal when they are looked at one by one: the cutting of a tree, the flicking on of an air conditioner, the dumping of some inconvenient waste.

"Evil" and "good" are terms not used frequently by politicians. Yet I do not see how this problem can be solved without reference to spiritual values found in every faith. For many scientists on the edge of new discov-

eries in cosmology and quantum physics, the reconciliation of science and religion sometimes now seems near at hand. It is a reconciliation not unlike the one we seek between humankind and nature. But even without defining the problem in religious terms, it is possible to conclude that the solutions we seek will be found in a new

faith in the future of life on Earth after our own, a faith in the future that justifies sacrifices in the present, a new moral courage to choose higher values in the conduct of human affairs, and a new reverence for absolute principles that can serve as stars by which to map the future course of our species and our place within creation.

To Skeptics on Global Warming . . .

By Al Gore Jr.

WASHINGTON — When environmental and financial experts from around the world gathered in Washington this week for a White House-sponsored conference on global warming, they expected a serious discussion. Instead, they were surprised and angered to hear President Bush wholeheartedly endorse delay and inaction.

Global climate change is real. It is the single most serious manifestation of a larger problem: the collision course between industrial civilization and the ecological system that supports life as we know it.

The purpose of Earth Day is to alert people around the world to that impending collision. And yet the Bush administration, according to a leaked memo, is advising its policymakers that "a better approach is to raise the many uncertainties," and argue with other skeptics that nothing should be done until unresolved questions are definitively answered.

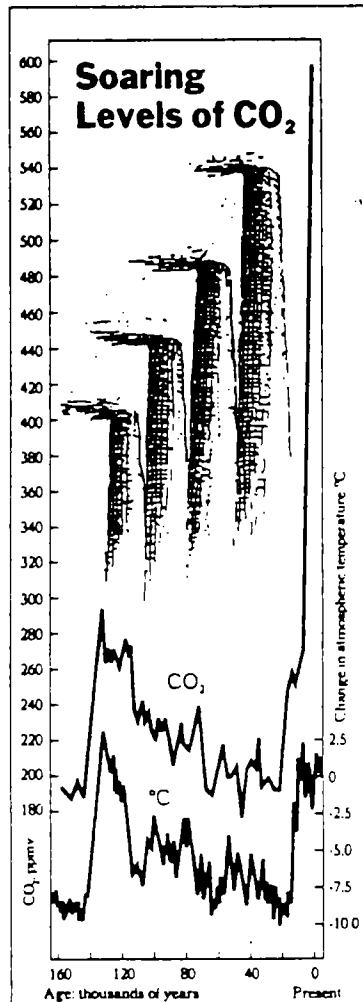
What are the skeptics' questions? There are several of the most prominent. None of them stands up under scrutiny.

Q: Aren't the dire predictions about global warming based on unreliable computer models? How do we know that there is any correlation between increased levels of carbon dioxide in the atmosphere and changes in temperature?

A: The most compelling evidence comes from careful studies of tiny air bubbles in Antarctic ice. These show that what has actually happened to the earth's climate during the last 50,000 years. As illustrated by the accompanying graph, carbon dioxide and temperature have gone up and down in lockstep for as far back as scientists can measure.

Through the last two ice ages and the period of great warming in between, levels of carbon dioxide have fluctuated between 200 and 300 parts per million. Even the skeptics agree that concentrations of carbon dioxide will be pushed to levels of 600 parts per million within the next 35 to 45 years. It is irresponsible to assume that after moving in tandem with carbon dioxide for 160,000 years, temperatures will not be affected by those dramatic increases.

Q: Do we know enough to act? Couldn't we study the problem until



The New York Times. Illustration by Janusz Kapusta

we eliminate the uncertainties?

A: That was the Administration's excuse last year, when it asked a distinguished United Nations-sponsored group of scientists to answer that question. A draft of the scientists' long-awaited report, leaked to the press this week, concludes that we must act now. The scientists say there's still a chance that the problem won't be as bad as they fear, but there's an equal chance that it will be much worse than predicted.

Q: Come on, isn't this really a little far-fetched? After all, the Earth is a big place and probably has some kind of natural "thermostat" to maintain the present climate. Don't some scientists say that clouds or the oceans or sunspots will offset any effect caused by human activity?

A: While the Earth is indeed vast in size, the atmosphere surrounding it is less than one one-thousandth the

thickness of the Earth's diameter, a thin blue line around the crust of the Earth. Unprecedented population growth and new technologies for burning fuels, clearing forests and manufacturing chemicals have given humankind the ability to alter the composition of the atmosphere.

Everywhere on Earth, for example, each lungful of air now contains 600 percent more chlorine atoms than it did 40 years ago — or 3 billion years ago, for that matter. That chlorine is responsible for burning a hole in the stratospheric ozone layer. Similar increases in methane, nitrous oxide and other polluting gases add to the seriousness of global warming.

Q: But how can we trust scientists on this issue when some of them say global climate change is real and some of them say it's not?

A: Five hundred years ago, most scientists said the world was flat. Most people believed them because the Earth did indeed look flat. The new "model" of a round Earth was based on mathematical calculations that they could neither touch nor understand. Similarly, Galileo was punished for his then-novel view that the Earth orbited the sun, instead of the other way around.

In the last 20 years, eminent scientists continued to ridicule the theory of continental drift. The theory of global climate change used to be ridiculed, too. But in the last few years, the overwhelming majority of scientists who have examined the evidence have agreed that the problem is real.

Q: Didn't NASA just report that new measurements of the Earth's temperature in the last 10 years showed no evidence of warming?

A: That was the impression some people got. What NASA actually reported was that "nothing could be said" about a warming trend one way or another "due to the relatively short satellite data record." Temperatures naturally fluctuate so much from year to year that a single decade is not a long enough yardstick for a long-term trend. The decade as a whole, according to several other studies, was the hottest since temperatures have been recorded. The six hottest years on record occurred in the 1980's.

Q: O.K., suppose temperatures do rise by a few degrees. So what?

A: Even small changes in the average global temperature can have dramatic consequences. The last time there was a change as big as the one some now predict, temperatures dropped several degrees and what is now New York City was covered by ice one kilometer thick.

But this isn't about temperatures

alone. It's about drastically changing climatic patterns that affect the distribution of rainfall, the intensity of storms and droughts and the directions of prevailing winds and ocean currents, which in turn dramatically affect our weather and climate. Some scientists say the first effects will be erratic weather patterns with extremes of heat and cold.

Q: Isn't it easier to adapt to these changes than to prevent them?

A: The changes could occur so swiftly that effective adaptation might become virtually impossible. The longer we wait, the more unpleasant our choices become.

We are in fact conducting a massive, unprecedented — some say unethical — experiment with consequences for all future generations. As

... You're wrong on facts and reasoning.

you make your choice, bear in mind that you're choosing not only for your own generation but for your grandchildren as well. And remember too that our abuse of the environment could lead to the extinction of more than half of all species within the lifetimes of our children.

Q: Isn't the cost of preventing this problem too high?

A: Many of the solutions, such as eliminating subsidies for clear-cutting forests, actually save money. In any event, the costs of inaction are much higher, even if the skeptics refuse to measure them.

Q: The changes you say are needed are too sweeping to be politically possible.

A: What if I had asked you six months ago to assess the possibility that people in every country in Eastern Europe would abandon Communism, sing "We Shall Overcome" and embrace democracy within 90 days? Would you have called that "unlikely?" We all would have. But it happened because people changed their way of thinking about Communism.

People are changing their thinking about the importance of protecting the global environment. We too are showing our willingness to act. The obstacles may seem immovable, but so did the Berlin wall. With bold leadership and a new political "ecolibrism," we too shall overcome. □

POSTCARD ANTARCTICA

UNBEARABLE WHITENESS

I'M TRYING TO remember what I thought about Antarctica before I came here. For the most part, I didn't think about it at all. It is just plain remote. From the other side of the world, in Christchurch, New Zealand, it is another eight hours due south by plane to the main U.S. base, McMurdo, and then another three hours from there to the South Pole.

I came to the coldest place on Earth to hunt for information about global warming, but I was unprepared for the continent itself. For example, I didn't know that the land area is half again as large as the entire United States. Or that 90 percent of all the ice in the world is here—which means, among other things, that there is really no comparison between this place and the Arctic. Antarctica is larger, more isolated, more important in the global ecosystem—and much colder.

You don't expect a continent at the "bottom" of the world to have an altitude three times higher than any other continent. When I stepped out of the ski plane at the Pole, my awareness was divided between the 56-degree-below-zero weather and the dizziness of being at almost 10,000 feet. The altitude of the enormous polar plateau is due primarily to ice that is almost two miles thick. Although its ice and snow contain 70 percent of all the fresh water on Earth, Antarctica gets so little precipitation that it is classified as the world's largest desert. And while the continent goes dark for six months in winter, it still receives more sunlight during its six-month-long summer day than the equatorial regions receive in an entire year. Yet all that light creates virtually no surface heat, because most of it is reflected right back up into space. For anyone caught in that crossfire of whiteness, sunglasses are a medical necessity.

The ice shelf expands in winter to seven times its summer maximum. The small population of human beings sent here by 22 nations expands in summer and contracts in winter by proportions almost precisely inverse to those of the ice.

WHILE MOST of Antarctica is the cleanest, most pristine area on Earth, the waters immediately adjacent to the American base are among the most polluted in the world. PCBs and "we don't know what else," dumped years ago, have killed every vestige of life in a small area of McMurdo Sound. The nuclear power plant that leaked in 1962 was dismantled and returned to the United States. But even today the base dumps "diluted" raw sewage directly into the sound and burns its solid waste in an open pit.

In the last few years, several other developments have brought new attention to Antarctica. In 1985 an emergency expedition confirmed the existence of a large and growing polar hole in the stratospheric ozone layer (which protects humans from deadly ultraviolet-B radiation). The same team found incontrovertible evidence

that man-made chemicals called chlorofluorocarbons (CFCs) were responsible.

A new international agreement was signed this year to reduce CFC production a little, though not enough. Meanwhile, the world's fossil fuels are being burned at such a rapid rate that the resulting carbon dioxide, along with other "greenhouse gases," may have already triggered the long-predicted global warming. At least some scientists said this summer that they are finally convinced.

The air is clearer and crisper in Antarctica than anywhere I've ever been, and visibility is remarkable over great distances. But that can suddenly change, as I learned firsthand, during something known as a "whiteout." The winds of a sudden storm saturate the air so thoroughly with snow that first the horizon, then closer landmarks, and then even the hood of your vehicle can disappear in a shroud of whiteness. Travelers lose their orientation and perspective. Some tell stories of seeing a building in the distance only to find that it was a pack of cigarettes a few feet away. Having just lived through a general election campaign in which Willie Horton was a more prominent political landmark than the budget or trade deficit, I had the feeling I had gone from one whiteout to another.

I CAME HERE because Antarctica is now the frontier of the global ecological crisis. High in the Transantarctic Mountains, a badly sunburned scientist talked about the ice cores he and his team were pulling from a deep hole drilled into the glacier on which we stood. He interpreted the annual layers of ice and snow the way woodsmen read tree rings. "Here is where the U.S. Congress passed the Clean Air Act," he said, pointing to the beginning of the 1970s. Moving down the ice core, back to the early 1960s, he added, "And here is where the world stopped atmospheric nuclear testing." These and other ice cores contain highly accurate information about the makeup of the Earth's atmosphere year by year for tens of thousands of years. From such cores, we know, for example, that there were dramatically lower levels of carbon dioxide in the atmosphere at the peak of the last Ice Age, 20,000 years ago, when the island of Manhattan was under one kilometer of ice. By contrast, the ice and snow laid down in the 1980s show levels of carbon dioxide, methane, CFCs, nitrous oxide, and other gases responsible for the greenhouse effect higher than they have been in at least 160,000 years (as far back as the ice cores measure). CFCs are receiving particular attention because they cause not only 20 percent of the greenhouse effect but virtually all of the destruction of the ozone layer.

Something else is different about the ice layers from the 1980s—they look different to the naked eye because of thick, alternating layers of "hoar" ice, apparently caused by partial melting and recrystallization into larger granules. The scientists are as yet cautiously withholding judgment on whether this is the clear signal of Antarctic warming that many have anticipated.

When I say Antarctica is the frontier of the ecological crisis, I don't mean only that pollution can now be found at the remotest point on Earth. Antarctica is also the place

where both ozone destruction and global warming have their first and most dramatic impacts. It is also increasingly apparent that Antarctica plays a far more significant role than any other part of the Earth in the global climate system. For one thing, the cold waters surrounding the continent absorb more carbon dioxide from the atmosphere than all the rain forests, and create the nutrient-rich "bottom water" for most of the world ocean of which Antarctica is the epicenter. Also, aside from the sun and the rotation of the Earth, Antarctica is the single most powerful engine driving the world's weather, redistributing its massive coldness through the winds of the air and the currents of the sea. As greenhouse gases trap more heat in the Earth's atmosphere and temperatures climb, they are expected to climb fastest of all here in Antarctica, because any melting at the edge of the ice shelf is accompanied by a dramatic change in the albedo—reflectivity—of the surface exposed to sunlight. The increased absorption of the sun's rays by the ocean then magnifies the local warming trend, melting more ice at the margin and absorbing yet more radiation from the sun.

THERE ARE three potential catastrophes that scientists fear could eventually be caused by the warming of Antarctica. First, a dramatic rise in sea level. This would come not from the melting of sea ice, which is already floating in the ocean, but from a rapid breakup of the massive West Antarctic ice shelf, which scientists believe could then plop into the ocean, raising the sea level 15 to 20 feet, wiping out low-lying coastal cities and nations like Bangladesh. But this is further off than most greenhouse impacts, perhaps 200 years.

Second, something that some scientists worry could occur much sooner is a change in the ability of the Antarctic seas to absorb carbon dioxide as they get warmer. Partly because it is so cold, the southern ocean now absorbs between one-third and one-half of all carbon dioxide emissions from industrial nations. Since carbon dioxide is by far the most important greenhouse gas, we must concern ourselves not only with the rate at which our civilization produces it but also the rate at which the Earth absorbs it.

The Earth has two lungs—the forests and the southern ocean. Unfortunately, we are destroying our forests at the rate of one football field every second, an area the size of Tennessee every year. Since the oceans of the world contain 50 times as much carbon dioxide as the atmosphere, even small changes in the temperature-sensitive mechanisms by which carbon dioxide is transferred back and forth between the oceans and the air can have profound implications.

Third, scientists fear that if their predictions are correct, and temperatures at the poles increase far more rapidly than at the equator, then the very pattern of the world weather system might change. This is because the difference between temperatures at the equator and at the poles has been relatively constant for a long time. As a result, the

redistribution of heat from the equator to the poles and cold from the poles to the equator has been accomplished through an essentially constant pattern of wind and ocean

currents. If temperatures rise disproportionately in Antarctica, the equilibrium could change, creating new patterns that would redistribute less cold and more heat. Something like this once happened on a small scale in Greenland. The so-called "little ice age" beginning 500 years ago abruptly covered the southern and western agricultural areas that gave Greenland its name with the ice and snow that now make people wonder where the name came from.

Similar though larger and anthropogenic global weather changes now thought to be under way are expected to cause widespread droughts and heat waves within our children's lifetimes. Indeed, some argue they have already begun.

In spite of these enormous stakes and in spite of the central role played by Antarctica, an international scientific conference in Tasmania this fall concluded, "There is no established strategy either for early detection of climate change in Antarctica or understanding and prediction of the probable effect of climate warming on atmospheric and oceanic circulation, ice-sheet volume, and sea level."

Even at that, the scientists are further along than the politicians. Why are we waiting to act?

Perhaps partly because of the unprecedented nature of the crisis. It is simply beyond our experience and outside of what we call common sense. So we put it in the place in our minds where Antarctica exists and tag it with the same mental labels—remote, alien, hopelessly distorted by the maps of the world we inhabit, too hard to get to and too unforgiving for us to stay very long.

The real question is whether the world's political system can find a new equilibrium before the world's climate system loses its current one. Even now, the winds of change are approaching hurricane force. It took a million years for the population of the world to reach two billion. Now, in the course of a single human lifetime—mine—it is rocketing toward ten billion (and is already halfway there). Startling graphs showing the loss of forest land, topsoil, stratospheric ozone, and species all follow the same pattern of sudden, unprecedented acceleration in the latter half of the 20th century. And yet, so far, the pattern of our politics remains remarkably unchanged.

When it does come, the change will involve a new set of global goals, and a new way of thinking about ourselves, our children, and our whole world—even Antarctica.

AL GORE

Al Gore is U.S. senator from Tennessee.

The Green Factor

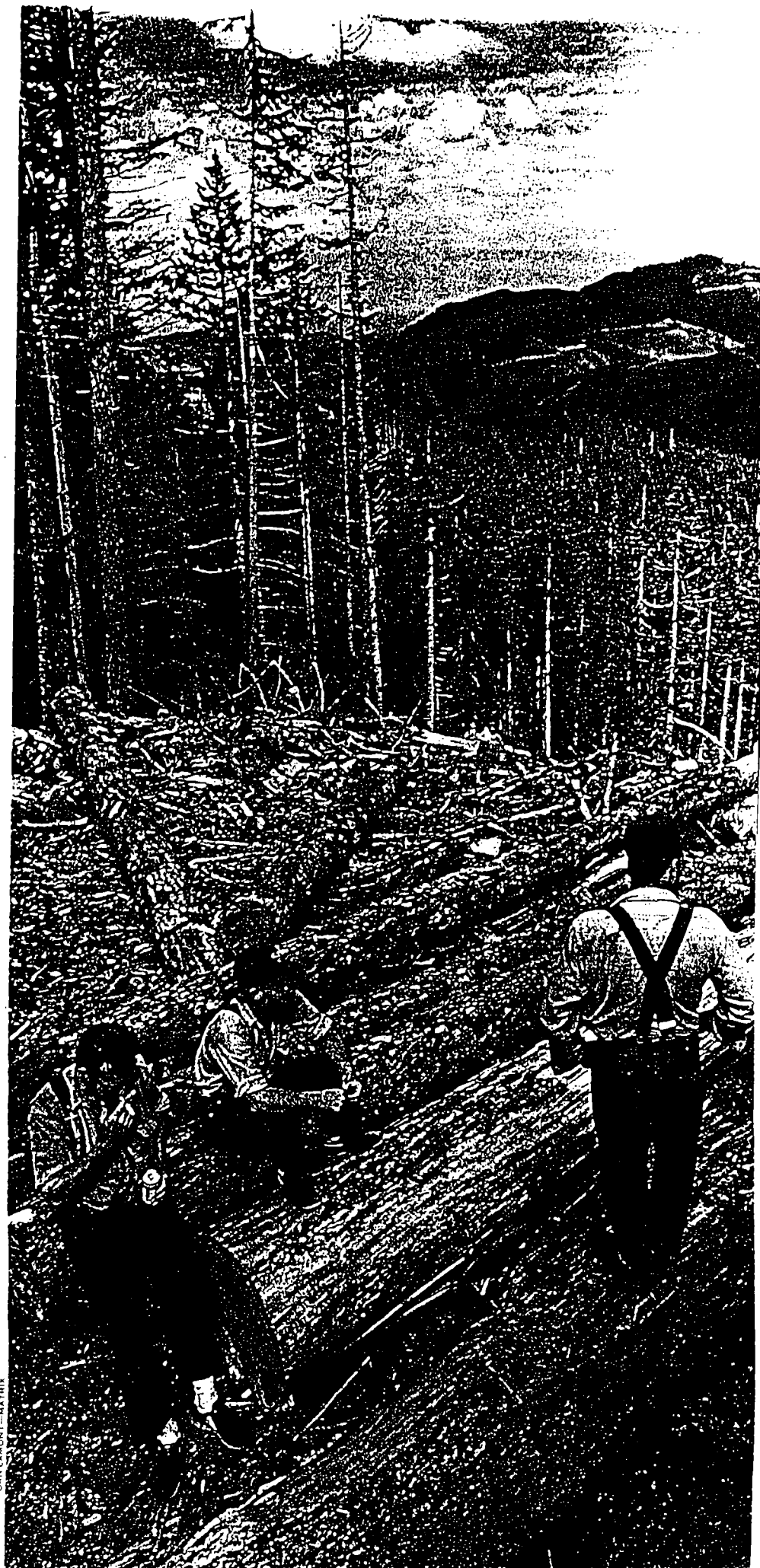
Does protecting the planet destroy jobs? Bush says yes, Clinton says no, and their running mates fight it out on the stump

By EUGENE LINDEN

WHAT HAPPENED TO THE "Environmental President"? In 1988 Vice President Bush vowed to combat the greenhouse effect with the "White House effect," and mercilessly attacked Michael Dukakis for his failure to clean up Boston Harbor. But last June, President Bush played Scrooge at the Earth Summit in Brazil. In September he visited timber country in the Pacific Northwest, where he promised to lift a court-imposed injunction that has halted logging in federally owned ancient forests. His Interior Department is planning to open national forests to private strip mining. What happened between 1988 and 1992? Politics happened.

While the Administration has not entirely abandoned its green appeal—White House officials claim that Bush has done more for the environment than any other President since Teddy Roosevelt—the reelection team is betting that U.S. voters will put their anxiety over the economy ahead of their worries about the planet. Thus the Bush campaign is attempting to paint Bill Clinton as a hostage to environmental extremists who would sacrifice American jobs to mollify the tree huggers. Point man in this assault: Vice President Dan Quayle. His main target: Clinton's running mate, Al Gore.

Clinton, for his part, is betting that concern for the environment is more than



MAN VS. NATURE: loggers clear-cut a stretch of forest in Washington State

DAN LAMONT—NATURE

a tad. He has assigned Gore the mission of delivering the message that working to preserve the biosphere can create rather than cost jobs. Clinton and Gore contend that sound environmental policies can be an engine of growth that will help the American economy compete with Germany and Japan in the 1990s.

The different ways the two camps use environmental issues reflect their divergent visions about the forces that will shape America's future. The Democrats argue that environmental decisions should be an integral part of economic planning. The Republicans seem to be saying the country should address environmental problems only when it can afford to. Nowhere do these differences emerge more sharply than in the attitudes of the vice-presidential contenders.

Senator Gore, who led the congressional delegation that attended the Earth Summit in Rio, is the Senate's most committed and knowledgeable environmentalist. Last spring Houghton Mifflin published Gore's best-selling *Earth in the Balance: Ecology and the Human Spirit*, a call for Americans to take urgent action in the face of a global ecological crisis.

Vice President Quayle, by contrast, argues that existing programs to improve the environment are more than adequate, that the state of America's air, water and forests is getting better, and that further improvements will come at the expense of jobs. Quayle plays a major policymaking role in this area as chairman of the President's Council on Competitiveness, an eight-member panel that, in the name of reducing government impediments to business, has worked to loosen environmental regulations on everything from wetlands to air pollution. The council was influential in persuading President Bush, virtually alone among world leaders, not to sign a treaty to protect endangered species at the Rio conference. The Administration's argument: that the treaty would harm the U.S. biotechnology industry.

In taking aim at the Democrats' environmental policies, Quayle ridicules Gore's book as "their manifesto." As described by the Vice President, *Earth in the Balance* is a collection of lunatic proposals that calls for a \$100 billion giveaway to the Third World, recommends new taxes that would put millions out of work, compares

capitalists to Nazis and calls for the elimination of the internal-combustion engine. "It's all pretty bizarre stuff," said Quayle in a speech in Grand Rapids, Michigan, last August. "This is a view detached from reality and devoid of common sense."

In his book, Gore does call for new taxes—but only to replace old ones. The idea is to tax ordinary workers less while making polluting industries pay the true costs of their activities. The \$100 billion figure is not a suggested giveaway but merely a computation of what the post-World War II Marshall Plan to reconstruct Europe would cost in today's dollars. The reference to Nazis is a greatly stretched interpretation of Gore's comment in the book that the failure in the past to heed the distress signals coming from the planet is analogous to the failure of the outside world to realize the seriousness of the German threat after Nazis destroyed Jewish homes and synagogues during the Kristallnacht rampage in 1936.

Gore also argues that during the next 25 years the U.S. should develop a more efficient alternative to the internal-combustion engine. It is hard to see why this is any more bizarre than sanctifying a 19th century technology as the core of American prosperity. "If Bush and Quayle want to pretend that 25 years from now our global competitors will be using the same technology on automobile engines that we are using today, they are kidding themselves," says Gore.

In Grand Rapids, Quayle attacked Gore for supporting congressional efforts to raise average fuel economy from 27 to 40 m.p.g., a move, Quayle argued, that would cost 300,000 jobs nationwide. This figure, taken from a study by the Motor Vehicle Manufacturers Association, is based on the unrealistic assumption that everyone now making a car that gets less than 40 m.p.g. would be put out of work. In contrast, a study to be released this week by the American Council for an Energy-Efficient Economy contends that improving fuel economy to 40 m.p.g. would lead to a net gain of 70,000 jobs by the year 2000. Howard Geller, executive director of the council, says fuel economy creates jobs by spurring the development of efficient new technologies for automobiles and putting money from gasoline savings into the hands of consumers. These gains, adds Geller, will more

than offset job losses in the oil business.

Gore says the jobs-vs.-environment argument is based on the same flawed logic that caused American businesses to disregard business guru W. Edwards Deming's seminal ideas on quality in past decades. "American manufacturers assumed that market forces had already perfectly balanced quality against cost and that any improvements would hurt the bottom line," says Gore. "Deming took his ideas to the Japanese, who proved that you could simultaneously improve quality and profits and proceeded to steal markets from American companies." Gore argues that Bush is now making the same mistake with pollution. The Japanese, already more energy efficient than the U.S., recognize that excessive pollution is a sign of inefficiency and that reducing pollution can help make industry more competitive. For Gore the real job of a competitiveness council would be to foster similar efforts to develop efficient technologies in the U.S.

PRESIDENT BUSH ALSO HAS ATTACKED Gore on the jobs-vs.-environment issue. During a visit to Colville, Washington, last month, he chastised the Senator for advocating protection of the spotted owl, which is endangered because 90% of its old-growth forest habitat has been cut. "It's time to put people ahead of owls," he said, and mockingly challenged Clinton to endorse Gore's book.

Though that message was obviously meant to appeal to Western voters, Bush may have miscalculated its effect. While he was applauded by the region's timber workers, many other Westerners realize that the issue of preserving the remaining fragments of old-growth forest is more complex than owls vs. lumberjacks. George Atiyeh, a former timberman and fourth-generation Oregonian, left the business after watching what clear-cuts have done to the Oregon landscape. "Either my eyes were lying, or I was kidding myself about logging being sustainable," he says. From the air, Oregon's national forests look far worse than the rain forests of Rondonia, Brazil, which has become a symbol of the wanton destruction of the Amazon. Atiyeh argues that automation and exports have cost far more jobs than the protection of endangered species has. Between 1980 and '85 the amount of timber cut in western Oregon increased 19% while timber employment fell 14%. The Administration's hard line on the environment does not appear to be winning many votes—and may even be hurting the Republicans. In a TIME/CNN poll of likely voters taken in late September, half the respondents said the loss of jobs because of environmental regulations was a "big problem." Yet when asked to choose between protecting the environment and protecting jobs, 48% chose the environ-

Is the quality of the environment getting better?

Yes 30%

No 62%

Will the government's current environmental regulations weaken or strengthen the economy in the long run?

Weaken 23%

Strengthen 27%

No effect 36%

Was Bush's statement that he would be the "environmental President" a lie?

Yes 60%

No 28%

From a telephone poll of 1,400 adult Americans
conducted by TIME/CNN on Sept. 22-24 by
Yaroslavich-Carney Shuman.
Sampling error is ± 2.5.

ment while 36% chose jobs. Forty percent of those questioned said they would be less likely to vote for a candidate if they disagreed with his environmental position even if they agreed on other major issues.

That could spell trouble for the President, whose credibility on the issue is not high. When asked whether they felt Bush lied when he said he would be the "environmental President," 60% said yes. The figures were larger among baby boomers (62%) and independents (63%). Even

among Republicans, 40% of those polled said he lied about his intentions. Ironically, the more Bush hammers at the jobs-vs.-environment issue, the more he seems to convince voters that he never meant to carry out his earlier promise.

Bush's advisers may have begun to weigh the political risks of their hard-line stance on environment. Last week White House chief of staff James Baker vetoed a proposal by Quayle's Competitiveness Council that would have allowed business-

es to use town dumps as disposal sites for certain hazardous wastes. Administration spokesmen have also begun to back away from another Competitiveness Council proposal that would vastly decrease the acreage now protected by wetlands legislation. The timing of all this could be coincidental. But it may be that, in the final stretch of his re-election campaign, Bush has concluded that one endangered species he would like to protect is his own presidency. ■

Preserving the 'Web of Life'

U.S. Sen. Al Gore, 43, is one of the most active defenders of the environment in Washington and is the author of a new book "Earth in the Balance." Recently he met with NEWSWEEK's Mary Hager to discuss his concerns about the global environment and what changes he believes are needed to preserve it. Excerpts:

HAGER: You saw the environment as an issue long before it was the popular thing to do. Why were you such an early convert?

GORE: I had a professor, Roger Revelle, who was the first person to measure CO₂ in the global atmosphere. I had tremendous respect for his mind and I believed him, not his critics. That was the initial seed. The issue itself pulled me deeper into an effort to understand it. Now, every time I pause to do a reality check about how serious this really is, the answer is, it is even more serious than we thought. It is a real challenge to our civilization to realize the enormity of what we're doing and then to imagine and organize an effective response. I'm reminded of the old parable of the blind man and the elephant. We see the problems of ozone depletion, global climate change, destruction of tropical rain forests, loss of biological species and ecological catastrophes like the Aral Sea, but it takes a little time to realize they are all part of the same underlying crisis.

What is that "same underlying crisis"?

A collision between industrial civilization as we presently organize it and the ecological system of the earth. Basically, three factors have led to this. The first is population, with a staggering increase in our lifetime. Second, the scientific and technological revolution has magnified our ability to affect the environment and changed the consequences of exploiting the earth as profoundly as nuclear weapons changed warfare. Third, and most important, a change in our way of thinking which began with the scientific revolution 350 years ago but was basically benign until our greater numbers and ecological power made it dangerous to the earth. That change was based on the assumption that we are separate from the earth. In fact, we are part of the web of life and we are recklessly endangering ourselves as we go about this process of destroying the ecological balance of the earth.

Al Gore



JOHN FICARA—NEWSWEEK

A leading U.S. senator says the environment will become a defining political issue around the world

Are you a voice in the wilderness, or are others beginning to see and say the same things?

The new way of thinking about our responsibility to the global environment is gaining momentum rapidly. Young people think this is the No. 1 issue facing the world. Europe has already modified its political equilibrium to take these issues into account, [and] Japan is moving so much more rapidly than we are. It is only a matter of time before our political system shifts and takes this into account. I think this must and will become the central organizing principle for the post-cold-war world.

How will that come about?

In most counties in my home state of Tennessee, the hottest single issue is where to put the new landfill or the new incinerator. The reason people get so intimately involved is they think it involves their backyard, and that overrides economic concerns. What is in the process of changing politically is the definition of "backyard." Young people under-

stand the global environment is part of their backyard. When the connection between the devastation of the global environment and our backyard is made emotionally, not intellectually, then the same intensity you see with local landfill issues will be brought to global environmental issues.

What role should governments play?

Affirmative measures by the nations of the world to address specific points will be necessary. I propose a global Marshall Plan, with Japanese and European capital helping to lead the way, to address those factors which cause the demographic transition, to make possible the development and dissemination of new technologies to substitute for the ones that are so harmful. A lot of these changes are ones we need to make for other reasons anyway. Pollution is waste. It is economic waste. It is environmental waste. Eliminate one, you eliminate the other. When enough people are committed, the transformation is going to be a lot easier than people think.

How close are we to that critical mass?

I think within a very few years—much closer than most people believe. The political equilibrium is about to shift.

Why did you write "Earth in the Balance"?

In hopes of hastening the arrival of that shift. I think we are in a race. I don't think we have that much time before we do irreparable damage to the ecological balance. The rate of loss of living species is now 1,000 times greater than any time in the last 65 million years. The accumulation of greenhouse gases is proceeding at a reckless pace. It is crazy to keep this up. We have to change the pattern of our political system before the earth's ecological system loses its current pattern. Civilization has prospered for the last 9,000 years within a global climate balance that has remained essentially unchanged. Civilization is carefully configured to that climate balance. If we change it suddenly, the consequences will be devastating and extremely difficult to cope with. The amount of suffering, loss of life, disruption in civilization's ability to move forward will be unimaginable. Some change is already built into the system, but the worst of it can be avoided.

I. BACKGROUND

A. UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT

In December of 1989, the United Nations General Assembly adopted Resolution 44/228, calling for a major, comprehensive international conference on the global environment and development, to be held in Rio de Janeiro, Brazil, in June, 1992. The United Nations Conference on Environment and Development (UNCED) was established by the resolution to build upon and commemorate the 20th anniversary of the United Nations Conference on the Human Environment, held in Stockholm in 1972. The Stockholm conference led to a Declaration of Principles (the Stockholm Declaration) to preserve and enhance the human environment.

The central purpose of the UNCED was to identify how to address increasingly severe global environment and development problems. The conference would confront the pollution and degradation of land, water and air resources threatening to intensify as world population increases -- eventually more than doubling -- into the next century. And, the conference would recognize that at the same time, current development patterns are widening the gulf between rich and poor and that anticipated population growth would be most pronounced in those regions of the world with the fewest economic opportunities. The goal of UNCED therefore was to bring together heads of state to begin to chart a course for development that would better meet the needs of people around the world while preserving the natural resource base on which sustained development depends. UNCED was and continues to be referred to as the "Earth Summit".

Maurice Strong, a Canadian businessman who had served as Secretary General of the Stockholm Conference in 1972, was selected to serve as Secretary General of the UNCED. Headquartered in Geneva, the Secretariat played a key role in managing and moving forward the UNCED's ambitious agenda. As outlined in the Resolution establishing the UNCED, the primary issues to be address included:

- o improving the environment of the poor in urban and rural areas;
- o protecting human health and improving quality of life;
- o protection of the atmosphere by combating climate change, depletion of the ozone layer and transboundary air pollution;
- o protection of the quality and supply of freshwater resources;
- o protection of the oceans and other seas;
- o protection and management of land resources, including combating desertification, deforestation, and drought;

- o conservation of biological diversity and environmentally sound management of biotechnology;

- o environmentally sound waste management.

To undertake the task of crafting agreements and charting an international strategy to deal with these issues, a "preparatory committee", or Prepcom, was engaged and made open to all members of the United Nations. Most nations did take part. The Prepcom held four meetings, each lasting approximately one month, with the first in Nairobi, Kenya, in August 1990. Two subsequent meetings were held in Geneva during 1991 and a final session in New York, March 2 - April 4, 1992. Tommy Koh, a former Ambassador from Singapore to the United States, chaired the Prepcom and deftly guided the negotiations from some 178 nations to agreement on action plans.

Three key documents resulted from the UNCED process:

- o "Agenda 21" -- comprising some 40 chapters -- is a comprehensive but non-legally binding action program designed to reconcile the goals of continued economic development and environmental preservation to ensure that human needs are met in a sustainable fashion.

- o The "Rio Declaration on Environment and Development" sets out 27 Principles that identify rights and obligations to guide world leaders in "Working towards international agreements with respect to the interests of all and [to] protect the integrity of the global environmental and developmental system."

- o The "Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests" is a non-legally binding statement addressing the multiple uses and functions of forest resources.

Negotiations were also carried out on simultaneous but separate tracks on two major international conventions, which were presented for signature at UNCED: a global climate change convention and a biological diversity convention.

B. CLIMATE CHANGE CONVENTION

The negotiating process aimed at producing a draft convention on climate change in time to be presented for signature at the Earth Summit was initiated pursuant to UN General Assembly resolution 45/212, which was adopted on December 21, 1990. The Intergovernmental Negotiating Committee (INC) created by the resolution held five negotiating sessions: in Chantilly, Virginia, February 4 - 14, 1991; Geneva, Switzerland, June 19 - 29, 1991; Nairobi, Kenya, September 9 - 20, 1991; Geneva, December 9 - 20, 1991; and New York City during the last two weeks of February, 1992. Some 130 nations participated in the

sessions, in addition to more than a dozen affected United Nations agencies and non-governmental organizations (NGOs).

The INC negotiations were supported by the findings of the Intergovernmental Panel on Climate Change (IPCC) which was established in November 1988 by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) "to carry out internationally coordinated scientific assessments of the magnitude, timing and potential impact of climate change." The role of the IPCC was reinforced by UN General Assembly Resolution 43/53, adopted in December, 1988, which further clarified the IPCC's objectives, and called upon all relevant organizations and programmes of the United Nations system to support the IPCC's work. The IPCC divided its work among three working groups:

- o Working Group I, dealing with the science of climate change, chaired by the United Kingdom;

- o Working Group II, dealing with the environmental and socio-economic impacts of climate change, chaired by the (former) Soviet Union;

- o Working Group III, the Response Strategies Working Group chaired by the United States;

and submitted its findings to the U.N. General Assembly in the fall of 1990. The major conclusions reported by the IPCC included the following:

- o There is a natural greenhouse effect that keeps the planet warmer than it otherwise would be;

- o Anthropogenic emissions of greenhouse gases are substantially increasing and will enhance the greenhouse effect, resulting on average in an additional warming of the Earth's surface;

- o An effective doubling of carbon dioxide in the atmosphere will produce a global mean temperature increase in the range of 1.5 degrees C to 4.5 degrees C, however, the precise timing, magnitude and regional impact of this increase cannot be predicted with certainty;

- o Global mean surface air temperature has increased by 0.3 to 0.6 degrees C over the last 100 years. This magnitude of warming is consistent with predictions from global climate general circulation models of anthropogenically induced changes, but is also within the range of natural variability.

The goal of the INC was to produce a framework convention on climate change, "containing appropriate commitments, and any related instruments as might be agreed upon." The Framework Convention was adopted at the conclusion of the fifth negotiating session in February, 1992, and by June 14, the convention had been signed by 153

nations including the US. Although specific commitments to targeted reductions in greenhouse gas emissions were sought by many parties to the negotiations, the United States and some other countries successfully resisted inclusion of these throughout the negotiating process.

C. BIOLOGICAL DIVERSITY CONVENTION

The Biological Diversity Convention, completed on May 22, 1992, and presented for signature at the Rio conference, was the result of four years of negotiations under the auspices of the United Nations Environment Program. This process began on May 25, 1989, with the adoption of Resolution 15/34 by the Governing Council of UNEP, which called for the development of a legal instrument to protect the diverse biological resources of the planet. Dr. Mostafa Tolba, the Executive Director of UNEP convened an ad hoc working group of legal and technical experts, "with a mandate to negotiate an international legal instrument for the conservation of the biological diversity of the planet." In May, 1991, the UNEP Governing Council changed the name of the negotiating body to the Intergovernmental Negotiating Committee on Biological Diversity, in part, to create a structure resembling the climate change negotiations.

Two working groups were established within the Intergovernmental Negotiating Committee to facilitate the negotiating process:

- o Working Group I, to examine issues such as habitat preservation, global lists of key biological diversity areas, general obligations, principles, and in situ and ex situ preservation of species; and

- o Working Group II, to take up such issues as financial resources, information and data, access to genetic resources, and technology transfer.

A special group to formulate and agree upon definitions was formed directly under the chairman.

Five formal negotiating sessions were held: in Nairobi, Kenya, February 1991; Madrid, Spain, June 1991; Geneva, Switzerland, November 25 - December 4, 1991; Nairobi, February 6 - 14, 1992; and again in Nairobi, May 1992. Negotiations on the Convention on Biological Diversity were concluded on May 22, 1992 and by June 14 the Convention had been signed by 153 states.

II. SUBSTANTIVE ANALYSIS OF THE RIO AGREEMENTS

A. AGENDA 21

A full listing of the issues addressed in Agenda 21 is provided as an addendum to this report. This analysis will highlight those issues that were particularly prominent in the UNCED discussions. By way of a general comment, it should be noted that Agenda 21 puts forth several themes and action items that, if fully implemented, could prove to be quite significant for domestic and international policy. For example, governments are called on to devise national sustainable development strategies. This undertaking could involve a review of -- and highlight necessary changes in -- a wide range of social, environmental and economic policies. In addition, a greater role for women at the national, regional and international levels in the design and implementation of development strategies is called for, while governments are urged to decentralize decision-making processes and afford rural, local and indigenous groups a greater opportunity for input in decisions that affect them. Governments are also called on to undertake environmental impact assessments of their own activities that may have significant environmental consequences and to facilitate community access to information important to human health or the environment.

1. Chapter 33. Financial Resources and Mechanisms:

Noting that a "substantially increased effort" is required of both developed and developing countries to finance the implementation of Agenda 21, it was agreed that:

- o In general, financing will "come from a country's own public and private sectors";

- o However, developed countries reaffirmed their previously undertaken "commitments to reach the accepted United Nations target of 0.7 per cent of GNP [gross national product] for ODA [overseas development assistance]". It should be noted that the US has not previously undertaken this UN commitment. Therefore, use of the word "reaffirm" appears to exclude the US from the terms of this provision;

- o Developed countries agree to "make their best efforts to increase their level of ODA."

In addition to calling for increased funding, this chapter of Agenda 21 also identified mechanisms that could be used to provide the necessary financial and technical support. The mechanisms identified included:

- o The multilateral development banks, in particular, the World Bank's International Development Association (IDA); the regional and subregional development banks; and the Global Environment Facility. With regard to IDA, the document states that, among various issues and options that nations will consider in the forthcoming replenishment talks, "special consideration should be given to the statement made by the President of the International Bank for Reconstruction and

Development at the Conference in plenary meeting." This statement is intended to lend support for -- without expressly accepting at this time -- Lewis Preston's suggestion in his address in Rio that, in addition to maintaining funding for IDA in real terms, countries should provide an additional "Earth Increment" to help the poorest countries meet the objectives of Agenda 21. With regard to the GEF, a restructuring is called for that will "ensure a governance that is transparent and democratic in nature," as well as leave open the possibility that scope of the GEF could be expanded to include global environmental problems in addition to the four that are currently within the GEF's purview.

- o The relevant specialized agencies, other United Nations bodies and other international organizations;

- o Multilateral institutions for capacity-building and technical cooperation;

- o Bilateral assistance programs;

- o Debt relief;

- o Private funding;

- o Investment;

- o Various forms of new and innovative financing.

Several specific pledges of assistance to fund Agenda 21 were made in Rio. The Japanese, for example, announced an increase in environmentally-related aid from \$3.1 billion during the last three years to more than \$7 billion during the next five years. The European Community as a whole pledged \$4 billion as an "initial commitment" while member states such as Germany and the United Kingdom pledged to support an increase in GEF funds from the current \$1.5 billion to \$2 to \$3 billion. Chapter 33 calls on other developed countries also to make financial commitments and to report on plans to meet those commitments at the UN General Assembly this fall.

To ensure that funds will be used in the most efficient and effective manner toward the objectives of Agenda 21, developing nations are called upon to "begin to draw up national plans for sustainable development". These plans will be reviewed and figure significantly into the decisions of potential multilateral lenders in their Consultative meetings with individual developing countries. And, these plans will help ensure that proposed development projects will be carried out in an environmentally and economically sound manner.

2. Chapter 38. International Institutional Arrangements

This Chapter suggests means by which the activities of various intergovernmental and United Nations agencies with competence in the

areas of environment and development may be better coordinated in order to further the objectives of Agenda 21. It was generally agreed by all parties that the focus here should be on better coordination among existing bodies rather than the creation of wholly new institutions. In this regard, a strengthened role for UNEP and UNDP in such areas as environmental monitoring and assessment; information exchange; and the building of technical and institutional capacity in the developing countries was called for.

The Chapter does, however, call for a new organization that will be a part of a pre-existing United Nations' body. This new organization -- the Sustainable Development Commission -- is proposed to be established within the UN Economic and Social Council. The structure and function of the Sustainable Development Commission has not yet been fully detailed. Rather, final decisions are to be taken at the General Assembly in the fall of this year. It is anticipated, however, that the Commission will be the primary body for monitoring and assessing progress in the implementation of Agenda 21, the Rio Declaration, and the Statement of Principles on Forests. To this end, it will call for reports from governments and undertake its own studies and assessments.

3. Chapter 34. Access to Environmentally Sound Technology

The activities proposed in this Chapter aim at "improving conditions and processes on information, access to and transfer of technology," particularly to developing countries, in order to promote sustainable development. Issues relating to the protection of intellectual property rights and to the terms of technology transfer, in particular, whether transfer would be on "preferential and concessional" terms, proved particularly contentious. The final document recognizes the importance of protecting intellectual property rights while calling on governments to identify and reduce barriers to access to technology. In addition, transfer on preferential and concessional terms is recognized as at least one option that may be pursued by parties to a transfer agreement.

In furtherance of the objectives of this Chapter, governments undertake to:

- o Develop international information networks which link national, subregional, regional and international systems;
- o Formulate policies and programs for the effective transfer of technologies that are in the public domain;
- o Encourage public and private sector creation of and enhance access to environmentally sound technologies;
- o Establish a collaborative network of research centers;

- o Build technology assessment capacity for the management of environmentally sound technology, including by conducting environmental impact and risk assessments;

- o Promote long-term collaborative arrangements, including joint ventures, between enterprises of developed and developing countries for the development of environmentally sound technologies.

B. RIO DECLARATION

This document was originally intended to be an "Earth Charter" - a more hopeful and less contentious document, with the moral power of the Universal Declaration on Human Rights -- to mark the beginning of a global partnership among nations to work toward sustainable patterns of development. Opposition to a document of this import by some countries, including the US, however, combined with persistent calls by the developing nations for a recognition by the developed countries of: their disproportionate contribution to global environmental problems; a need to change consumption patterns in the North to stem further environmental destruction; and a need for developed countries to provide increased technical and financial assistance to the developing world, resulted in an impasse in the negotiations to produce an "Earth Charter". It is hoped, however, that the international community will continue talks aimed at producing an Earth Charter. In his Plenary address at the Earth Summit, Canadian Prime Minister Brian Mulroney suggested that the Rio Declaration be embraced pending the negotiation of an Earth Charter, which he called for by 1995, the fiftieth anniversary of the United Nations. This suggestion was positively received by many heads of state, although the US is expected to resist further discussion of the matter.

It should be noted that the Rio Declaration was drafted by Chairman Tommy Koh as an attempt to reconcile contentious issues. Many countries, however, expressed concern with regard to various provisions of the draft. The US for example, opposed recognition in Principle 3 of a "right to development" on the grounds that, unless it were expressed in a more qualified fashion, this right could be used by countries to justify infractions of human rights or other rights and obligations. In addition, Israel objected to Principle 23 which calls on governments to protect the environment and natural resources "of people under oppression, domination and occupation". In the end it was decided that all countries would refrain from insisting on changes and that the document would be agreed to in the form presented by Chairman Koh. Several countries, including the US, issued interpretative statements expressing their respective understandings of the document's import.

C. STATEMENT OF PRINCIPLES ON FORESTS

It was originally anticipated that a legally binding convention on the preservation of forests would be negotiated and agreed to in Rio. Discussions toward that end proved highly contentious, however, as the US initially insisted that the treaty should only apply to tropical forests, and as several developing countries resisted binding commitments on the grounds that they pose a threat to sovereignty and would unduly impede necessary development. Efforts to incorporate language calling for the negotiation of a legal instrument in the non-legally binding Statement that was ultimately agreed to also failed.

The Statement of Principles does recognize that forests should be "sustainably managed to meet the social, economic, ecological, cultural and spiritual human needs of present and future generations." The statement also calls on all countries to take action "towards reforestation, afforestation and forest conservation," and to carry out environmental impact assessments where government actions are likely to have significant adverse impacts on important forest resources. Failure to agree on what is entailed in "sustainable management" and to call for future talks aimed at producing a legal instrument that would define such key terms has raised concerns among many negotiators that the Statement will not prove effective in preserving forest ecosystems.

D. FRAMEWORK CONVENTION ON CLIMATE CHANGE

The objective of the Convention as specified in Article 2 is to achieve "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system." Article 2 further specifies that such stabilization "should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner." Toward this end, the Parties to the Convention undertake the commitments described below. Because developed, industrialized countries are responsible for the greatest share of anthropogenic greenhouse gas emissions and are best able, financially and technically, to stem those emissions, the undertakings called for in the Convention differ for developed and developing country Parties.

Undertakings pertaining to both developed and developing country Parties:

- o Publish national inventories of anthropogenic emissions of greenhouse gas emissions as well as programs to mitigate and facilitate adaptation to climate change. Note that, pursuant to Article 12 of the Convention, the report required of developed country parties is expected to be detailed in nature while only a general description is required of developing country Parties. In addition, an initial report is required of developed country Parties within six months of the entry into force of the Convention while the

timetable for developing country reports is three years from entry into force;

- o Promote and cooperate in the development and transfer of technologies that control or reduce emissions of greenhouse gases;

- o Promote and cooperate in research, educational initiatives, and exchange of information relevant to climate change.

Undertakings pertaining only to developed country Parties:

- o Adopt national policies on the mitigation of climate change, "by limiting its anthropogenic emissions of greenhouse gases and protecting and enhancing its greenhouse gas sinks and reservoirs;"

- o Communicate to the Conference of Parties detailed information on policies and measures relevant to the mitigation of climate change as well as on "resulting projected anthropogenic emissions by sources and removal by sinks of greenhouse gases ... with the aim of returning individually or jointly to their 1990 levels of these anthropogenic emissions";

- o Provide new and additional financial resources and facilitate the transfer of technology to developing country Parties to support their compliance with their obligations under the treaty. Pursuant to Articles 11 and 21, the Global Environment Facility will function as the mechanism for the provision of such resources and technology.

Throughout the negotiations on the Convention, the United States, alone among industrialized countries, opposed the incorporation of binding commitments to reduce greenhouse gas emissions. All other industrialized countries had either individually or jointly made commitments to reduce emissions and argued for the inclusion in the Convention of a commitment by developed countries to stabilize emissions of carbon dioxide, the primary greenhouse gas, at 1990 levels by the year 2000. In the face of persistent US opposition, these countries expressed a willingness during the course of the negotiations to accept more flexible language that would call for a stabilization of a combination of greenhouse gases and that would allow emissions to be offset by greenhouse sinks such as forests. But, the United States maintained its opposition. As a result, other industrialized countries -- anxious to ensure that the US, the largest single source of greenhouse gas emissions, would become a Party to the Convention -- ultimately accepted language that was devoid of binding commitments to reduce emissions. Some of these countries, however, later reaffirmed their commitments to reducing emissions by signing at the Earth Summit not only the Climate Convention but also a separate resolution which included the targets and timetables the U.S. opposed.

Because of the lack of binding commitments by developed countries to reduce emissions, Malaysia did not sign the Convention.

It should be noted, however, that the treaty does provide for a review of the adequacy of the undertakings in addressing climate change. Based on the review, the Parties are bound to take "appropriate action." Presumably, such action would include a binding commitment to reduce emissions. In addition, the White House has likened the Convention to the Vienna Convention on the Protection of the Stratospheric Ozone Layer. It is therefore fair to expect that follow-on Protocols, that will add binding commitments to the Convention, will be pursued -- just as the Montreal Protocol and London Amendments added binding measures to the original framework outlined in the Vienna Convention.

Action to begin to implement the provisions of the treaty is expected to be undertaken before it actually takes full force and effect (upon ratification by 50 Parties). In particular, President Bush, in his Plenary address at the UNCED, called for the preparation of national plans by January 1, 1993, and the European Community has similarly expressed a commitment to proceed rapidly to ratification and to the preparation of national plans.

E. CONVENTION ON BIOLOGICAL DIVERSITY

As outlined in Article 1, the objectives of the Convention are: "the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources." Toward these ends, the Convention specifies actions aimed at conserving plant and animal biodiversity and at facilitating access to and transfer of relevant technology.

Conservation Provisions:

Parties to the Convention undertake the following measures to conserve or ensure the sustainable use of biological diversity. Note that while the commitments are legally binding, they are qualified, and Parties are bound to fulfill them only "as far as possible and as appropriate:"

- o Develop national strategies for conservation and sustainable use of biological diversity, including the establishment of a system of protected areas as well as the establishment of ex-situ conservation facilities, and incorporate biodiversity considerations into national decision-making;

- o Identify and monitor particularly important components of biological diversity and any activities that are likely to have significant adverse impacts on biodiversity;

- o Promote research, training and educational programs supporting conservation and sustainable use of biodiversity;

- o Adopt means to regulate, manage or control risks to biological diversity and human health associated with the use and release of living modified organisms;

- o Respect and preserve knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biodiversity;

- o Introduce procedures requiring environmental impact assessments of proposed projects that are likely to have significant adverse effects on biodiversity;

- o Promote exchange of information and notification of activities under the Contracting Party's jurisdiction or control which are likely to significantly affect adversely the biodiversity of other States or areas such as the high seas that are beyond the limits of national jurisdiction;

- o Promote emergency response procedures for activities or events which present a grave or imminent danger to biodiversity.

Provisions Regarding Access to Technology:

- o Facilitate access to technologies, including biotechnology, through legislative, administrative or other policy measures as appropriate, particularly to Contracting Parties that are developing countries and that provide genetic resources that are used in those technologies;

- o Cooperate with other contracting parties, subject to national legislation and international law, in order to ensure that intellectual property rights are supportive of and do not run counter to the objectives of the Convention;

- o In conjunction with other Contracting Parties, determine how to establish a clearing-house mechanism to promote and facilitate technical and scientific cooperation;

- o Promote the establishment of joint research programs and joint ventures for the development of relevant technologies, including biotechnology.

The Convention also calls on Contracting Parties to provide financial support and incentives necessary for achievement of the Convention objectives. In this regard, developed country Parties undertake to provide new and additional financial resources to support the participation of developing country Parties. While the Convention notes that such funds may be made available on a bilateral basis, it is anticipated that the primary financial mechanism will be the Global Environment Facility, as indicated in Articles 21 and 39. Language in Article 39 that calls for a full restructuring of the GEF, however,

raised a concern among some industrialized countries, including the United States, that the Convention could be construed as contemplating some other financial mechanism, or a modification to the GEF that was not in accord with the modifications that were otherwise underway. Most countries that expressed this concern noted in separate statements upon signing the Convention in Rio that they understood the language to call for the use of the GEF as the primary financial mechanism.

The United States was alone among industrialized countries in declining to sign the Convention. In addition to our concern with regard to the GEF, we also took issue with provisions of the treaty dealing with intellectual property protections and with the treatment of modified living organisms. With regard to intellectual property protection, the White House believed the treaty could be read as calling for the subversion of such protections in order to facilitate the objective of transferring relevant technologies. Other countries did not share this concern, noting that, for example, Article 16 specifies that "In the case of technology subject to patents and other intellectual property rights, such access and transfer shall be provided on terms which recognize and are consistent with the adequate and effective protection of intellectual property rights."

On the issue of the treatment of modified living organisms, the United States disagreed with other countries that "means to regulate, manage or control the risks associated with the use and release of living modified organisms resulting from biotechnology which are likely to have adverse environmental impacts", as called for in Article 8 of the Convention, were necessary.

While in Rio, William Reilly, Administrator of the Environmental Protection Agency and Head of the United States Delegation, worked with other parties through the intercession of the Brazilian government to "fix" the provisions of the Convention that were of concern to the White House. Reilly's memo to Domestic Policy Advisor Clayton Yeutter on this subject and Yeutter's immediate rejection of the overture were leaked to the media, however. These events, together with a memo that had earlier leaked from Vice President Quayle's office that was highly critical of the biodiversity negotiations, as well as lingering resentment over the US insistence in the climate negotiations that binding commitments to reduce emissions of greenhouse gas emissions be deleted, led to a collapse of the effort to modify the treaty talks and to the generation of significant, adverse publicity concerning the role of the United States at the Rio Summit.