APPENDIX - 3

FIGURES

RAPID TECHNOLOGICAL CHANGES
The illiterates of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn and relearn

- Alvin Toffler
Figure 2

Source: Internet
Figure 3

Top U.S. auto companies

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>GM</td>
<td>263</td>
<td></td>
<td>181</td>
<td></td>
<td>432,000</td>
<td>$181.1</td>
</tr>
<tr>
<td>Ford</td>
<td>229</td>
<td></td>
<td>88</td>
<td></td>
<td>300,000**</td>
<td>$172.5</td>
</tr>
<tr>
<td>Chrysler</td>
<td>66</td>
<td></td>
<td>33</td>
<td></td>
<td>124,900</td>
<td>$49</td>
</tr>
</tbody>
</table>

Employment in U.S. motor vehicle and parts industry**

*Figure is for employees in North America, including Canada and Mexico.
**Retirees are an estimate.
***Includes autos, parts, motorcycles, RVs and trucks.
Sources: GM, Chrysler, Ford, Autodata Corp. Graphics reporting by Ken Bensinger

Lorena Isigahe Los Angeles Times
Figure 4

1000 Years of Changes
in Carbon Emissions,
CO$_2$ Concentrations
and Temperature

Source: Internet
Figure 5

 martin_kalfatovic
(click and get stats for your flickr account)

total: 9740 views  daily avg: 41

Source: Internet
Figure 6

2006 Worldwide Pornography Revenue

Source: Internet
Figure 7

Source: Internet
Figure 9

Children and Adults Waiting for DD Services in Wake County

Shaded area shows numbers waiting at specific points in time, with points in between assumed to be linear.

Source: Internet
Figure 10

Source: Internet
Figure 11

Index Bias
Cumulative difference between Laspeyres growth and chained Fisher growth

Graph 1: GDP

Graph 2: MxM

Graph 3: Exports

Graph 4: Imports

Source: internet
Figure 12

FY 2003 Budget Mechanism
(Dollars in Millions)

Research Project Grants
$399,234
62%

Research Centers
$231,65
4%

Other Research
$94,659
15%

Res. Training
$12,165
2%

R&D Contracts
$24,113
4%

IR
$60,147
10%

RMS
$18,238
3%

Source: Internet
Figure 13

U.S. Temperature

Source: Internet
Figure 14

Trends in 2x4 Housing Starts

Source: Internet
Figure 15

Antarctic Ice Core Data 1

Source: Internet
Figure 16

HYPE CYCLE FOR CONSUMER TECHNOLOGIES, 2004

Key: Time to plateau (years): - 2  2-5  5-10 years

Visibility

Digital photo printers  Satellite radio  Digital camcorders  High-Definition TV displays  Interactive TV

Digital media centers  Video on demand  Digital music players  Personal video recorders

Technology trigger  Peak of inflated expectations  Trough of disillusionment  Slope of Enlightenment  Plateau of productivity  Game consoles  Digital cameras

Home theatre  Digital TV  DVD players  Broadband  Household Wi-Fi  PDAs

Source: Gartner

Source: Internet
Figure 17

Source: Internet
CONVERGING TECHNOLOGIES FOR IMPROVING HUMAN PERFORMANCE

June 2002

Source: Internet
Figure 21

Almost ideal timing...

Source: Internet
Figure 22
Figure 23

1981:I=1

- Productivity
- Real Wages
- Trend productivity

Source: Internet
Figure 24

Source: Internet
Figure 25

Source: Internet
Figure 26

Changes in Rural/Urban Population, 1800-1990

Source: Internet
Rapid discharge characteristic (4C) of lithium-ion batteries using SCMG™

Source: internet
Figure 28

Water Quality Index Scores and Sites in the Fraser Basin (2001-2003)²

Source: Internet
GLOBAL WARMING
Figure 29

This is the last picture of our planet taken by a human being from space. It was taken in December 1972 during the Apollo 17 mission – the last Apollo mission – from a point halfway between the Earth and the Moon.

What makes this image so extraordinary is that it’s only photo we have of the Earth from space taken when the Sun was directly behind the spacecraft.

Just as eclipses of the Sun occur only on those rare occasions when the Earth and the Sun and the Moon are positioned along a straight line, this was the only time during the four-year series of Apollo missions when the sun was lined up almost directly behind the Moon while the spacecraft was making its journey. So the Earth, instead of being partly shrouded in darkness, appears fully illuminated.

For this reason, this image has become the most commonly published photograph in all of history. No other image comes close. In fact, 99 times out of 100, when you see a picture of Earth, this is the picture you are seeing.

Figure 30

This is the image that first caused me to think about - and then to become intensely focused on - global warming. It was shown in the mid-1960s to a small undergraduate class I took taught by the second teacher I want to tell you about: Roger Revelle.

Professor Revelle was the first scientist to propose measuring CO2 in the Earth’s atmosphere. He and the scientist he hired to run the study, Charles Keeling, began taking daily measurements in the middle of the Pacific Ocean over the big island of Hawaii in 1958.

After the first few years, they had enough data to produce this graphic image, which Professor Revelle showed to my class. It was clear even at this early stage of their experiment that the concentration of CO2 throughout the Earth’s atmosphere was going up at a significant rate.

As a result, when the Northern Hemisphere is tilted toward the Sun during the spring and summer, the leaves come out, and as they breathe in CO$_2$, the amount of CO$_2$ decreases worldwide.

When the Northern Hemisphere is tilted away from the Sun in the fall and winter, the leaves fall, and as they disgorge CO$_2$, the amount of CO$_2$ in the atmosphere goes back up again.

It's as if the entire Earth takes a big breath in and out once each year.
The same pattern of steadily increasing concentrations of CO$_2$ that was visible after the first several years of Revelle's measurements has continued year by year for almost a half-century. This remarkable and patiently collected daily record now stands as one of the most important series of measurements in the history of science.

The pre-industrial concentration of CO$_2$ was 280 parts per million. In 2005, that level, measured high above Mauna Loa, was 381 parts per million.

Figure 33

The thermometer to the right measures temperatures in the Northern Hemisphere over the past 10,000 years.

The blue is cold and the red is hot. The bottom of the graph marks 1,000 years ago and the current era is at the top.

1000 YEARS OF NORTHERN HEMISPHERE TEMPERATURE (°C)

Here's where CO$_2$ is now-way above anything measured in the prior 650,000-year record.

And with 45 years, this is where the CO₂ equivalent levels will be if we do not make dramatic changes quickly.

The top right point of this graph shows current global temperatures. And the bottom right point marks short distance—about an inch in the graph—represents the difference, in Chicago, between a nice day and a mile of ice over your head. Imagine what three times that much on the warm side would mean.

The hottest year recorded during this period was 2005.

Global Temperature since 1860: combined annual land, Air, and sea surface temperatures from 1860 to 2005.

The emerging consensus linking global warming to the increasingly destructive power of hurricanes has been based in part of research showing a significant increase in the number of category 4 and 5 hurricanes.

A separate study predicts that global warming increases the strength of the average hurricane a full half-step on the well known five-step scale.

The National Oceanic and Atmospheric Administration summarized some of the basic elements common to these new research studies in the graph shown below:

As water temperatures go up, wind velocity goes up, and so does storm moisture condensation.

**HURRICANE INTENSITY GROWS AS OCEANS HEAT UP**

- Water Temperature
- Wind velocity (shear) due to increased water temperature disparity
- Storm moisture content

In many areas of the world, global warming also increases the percentage of annual precipitation that falls as rain instead of snow, which has led to more flooding in spring and early summer.

In 2005 Europe had a year of unusual catastrophes very similar to the one in the United States.

While the United States was ending a seemingly unprecedented string of large hurricanes in 2005, Europe was experiencing a disastrous number of floods. United Press International summarized the feelings of many Europeans on August 26, 2005, when it reported: "Nature is going crazy in Europe."

Figure 40

Trucks that must travel on frozen highways in Alaska for most of the year now sometimes get stuck in the mud as the permafrost thaws.

Ironically, the oil companies that are trying to convince the U.S. Congress to let them drill for oil in protected areas on the northern slope of Alaska would also have to depend on frozen highways. But now, the massive thawing of the permafrost further complicates their already controversial proposal.

The graph below shows the number of days each year that the tundra in Alaska is frozen solidly enough to drive on.

Currently the number has fallen to fewer than 80 days per year. Spring is coming earlier, fall is arriving later. And all the while, the temperature keeps going up more rapidly in the Arctic than anywhere else in the world.

ALASKA WINTER TUNDRA TRAVEL DAYS: 1970 - 2002

Figure 41

Since the 1970s, the extent and thickness of the Arctic ice cap has diminished precipitously. There are now studies showing that if we continue with business as usual, the Arctic ice cap will completely disappear each year during the summertime. At present, it plays a crucial role in cooling the Earth. Preventing its disappearance must be one of our highest priorities.

SEA - ICE EXTENT: NORTHERN HEMISPHERE

Here is another example of how global warming disrupts the balance of nature as we have known it.

The blue line plots the sharp decline in the number of days per year with frost on the ground in southern Switzerland. The orange area shows the simultaneous sharp increase in the number of invasive alien species that have rushed in to fill newly created ecological niches.

The same thing is happening here in the United States too. In the American West, for example, the destructive spread of pine beetles used to be slowed by colder winters that reduced their numbers seasonally. But now, with fewer days of frost, the pine beetles are thriving and the pine trees are being devastated.

**SHIFTS IN SEASONS**

![Graph showing shifts in seasons with days of frost and number of invasive species over time.]

Many species around the world are now threatened by climate change, and some are becoming extinct - in part because of human enroachment into the places where they once thrived.

In fact, we are facing what biologists are beginning to describe as a mass extinction crisis, with a rate of extinction now 1,000 times higher than the normal background rate.

Many of the factors contributing to this wave of extinction are also contributing to the climate crisis. The two are connected. For example, the destruction of the Amazon rain forest drives many species to extinction and simultaneously adds more CO₂ to the atmosphere.

**SPECIES LOSS**

Figure 44

The graph below shows how frequently London has had to use these barriers in recent years. The data for years prior to the construction of the barriers represents the city's projections of what the number of closures would have been in those earlier years. The resulting pattern is similar to the increasing impact of global warming worldwide.

But further sea level rises could be many times larger and more rapid depending on what happens in Antarctica and Greenland - and on choices we make or do not make - now concerning global warming.

**ANNUAL CLOSURES OF THAMES BARRIERS**

Figure 45

If Greenland melted or broke up and slipped into the sea, or if half of Greenland and half of Antarctica melted or broke up and slipped into the sea, sea levels worldwide would increase by between 18 and 20 feet.

Tony Blair's advisor, David King, is among the scientists who have been warning about the potential consequences of large changes in these ice shelves. At a 2004 conference in Berlin, he said:

THE MAPS OF THE WORLD WILL HAVE TO BE REDRAWN.

SIR DAVID KING, U.K. SCIENCE ADVISOR

Figure 46

We are witnessing an unprecedented and massive collision between our civilization and the Earth.

Refuse Dump in Mexico City, 1996.

Figure 47

If you look at population growth in the context of history, it is obvious that the last 200 years represent a complete break with the pattern that prevailed for most of the millennia that humans have walked on the Earth. From the time when scientists say our species first appeared 160,000 to 190,000 years ago, until the time of Jesus Christ and Julius Caesar, human population had grown to a quarter of a billion people. By the time of America’s birth in 1776, it had grown to 1 billion. When the baby boom generation that I’m a part of was born at the end of World War II, the population had just crossed 2 billion. In many lifetimes, I have watched it go all the way to 6.5 billion. My generation will see it rise to more than 9 billion people.

The point, as illustrated by this graph, is simple and powerful: It took more than 10,000 generations for the human population to reach 2 billion. Then it began to rocket upward from 2 billion to 9 billion in the course of a single lifetime: ours. We have a moral obligation to take into account this dramatic change in terms of the relationship between our species and the planet.

POPULATION GROWTH THROUGHOUT HISTORY

Wildfires are becoming much more common as hotter temperatures dry out the soil and the leaves. In addition, warmer air produces more lightning. The graph below shows the steady increase in major wildfires in North and South America over the last five decades; the same pattern is found on every other continent as well.

**NUMBER OF MAJOR WILDFIRES IN THE AMERICAS BY DECADE**

And that brings me to the second factor that has transformed our relationship to the Earth—the scientific and technological revolution.

New advances in science and technology have brought us tremendous improvements in areas like medicine and communications, among many others. For all the advantages we have gained from our new technologies, we have also witnessed many unanticipated side effects.

The new power we have at our disposal hasn’t always been accompanied by new wisdom in the way we use it, particularly when we exercise our technologically enhanced power in the thoughtless pursuit of age-old habits, which are, after all, hard to change.

The simple formulas below are intended to illustrate what can happen when vastly more powerful technologies magnify the consequences of doing the same old thing without anticipating that there will be brand-new consequences.

Old habits + Old technology = Predictable consequences

Old habits + New technology = Dramatically altered consequences

As shown in this graphic representation of every nation’s relative contribution to global warming, the United States is responsible for more greenhouse gas pollution than South America, Africa, the Middle East, Australia, Japan, and Asia all put together.

Figure 52

CARBON EMISSIONS PER COUNTRY/REGION

TONS OF CARBON PER PERSON

AFRICA  INDIA  CHINA  JAPAN  EU  RUSSIA  U.S.
Unfortunately, the false choice posed between our economy and the environment affects our policies in harmful ways.

One example is automobile standards. Japan has cars that are required by law to get more than 45 miles per gallon. Europe is not far behind, and has passed new laws designed to surpass Japanese standards. Our friends in Canada and Australia are moving toward higher requirements of more than 30 miles per gallon.

Yet the United States is dead last.

We are told that we have to protect our automobile companies from competition in places like China where, it is said, there leaders do not care about the environment.

In fact, Chinese emissions standards have been raised and already far exceed our own. Ironically, we cannot sell cars made in America to China because we do not meet their environmental standards.

**COMPARISON OF FUEL ECONOMY AND EMISSIONS STANDARDS AROUND THE WORLD**

In California, the state legislature has taken the initiative to require higher standards for cars sold in California. But the auto companies are suing California to prevent this state law from taking effect—because it would mean that, 10 years from now, they would have to manufacture cars for California that are almost as efficient as China is making today.

Our outdated environmental standards are based on faulty thinking about the true relationship between the economy and the environment. They are intended in this case to help automobile companies succeed. But as the chart makes clear, it's the companies building more efficient cars that are doing well. The U.S. companies are in deep trouble. And they're still redoubling their efforts to sell large, inefficient gas-guzzlers even though the marketplace is sending the same message that the environment is sending.

**Figure 54**

CHANGE IN MARKET CAPITALIZATION: FEBRUARY - NOVEMBER 2005

- **Toyota**: +11.86%
- **Honda**: +3.28%
- **Ford**: -33.20%
- **GM**: -35.84%

Figure 55

The fourth and final problem in the way some people think about global warming is the dangerous misconception that if it really is as big a threat as the scientists are telling us it is, then may be we’re helpless to do anything about it so we might as well throw up our hands.

An astonishing number of people go straight from denial to despair, without pausing on the intermediate step of saying, "We can do something about this!"

INCOME DISPARITIES
Figure 56

Source: Internet
Figure 57

Real Median Household Income: 1967 to 2005

Source: Internet
Figure 58

Bar chart showing the population in crores based on income per day:
- <20 Rupees per day: 88
- >20 Rupees per day: 22

The chart indicates a significant portion of the population earns less than 20 Rupees per day.
Figure 59

Chart 6: Mean Household Income in U.S. Dollars, 2005

Source: Internet
Figure 60

Source: Internet
The horizontal axis (X) in this figure is the cumulative percentage of the population ranging from 0 to 100 percent. The vertical axis (Y) is the cumulative percentage of wealth or income, depending on which is being measured, ranging from 0 to 100 percent. The green Equality Line describes X = Y, which is to say that each person on this line has exactly the same amount of money or wealth as any other. The orange Lorenz Curve line describes the distribution of money if the market is, hypothetically, allowed to operate completely freely. This curve most closely matches the real distribution of wealth and income in the United States, although the curvature of the wealth curve is more acute than the curvature of the income curve.

Source: Internet
Figure 62

To determine the Gini Ratio, divide the area between the Equality Line and the Lorentz Curve by the entire area under the Equality Line. The Gini Ratio is \( A / (A + B) \) as shown here:

If the Gini ratio were 0, everyone would have the same amount of income or wealth, depending on which was being measured. This would be an example of extreme socialism. If the Gini ratio were 1, it would mean that one person would possess all of the income or wealth, an example of extreme capitalism. Capitalism seems to produce wealth but fails to distribute it equitably, while socialism distributes wealth but has been criticized for poor wealth generation.

Source: Internet
Source: Internet
Figure 64

Contribution to Mean Income of Household by Salary Band

Source: Internet
Figure 65

Income inequality and wealth inequality, 2004

Source: Internet
Figure 66

Source: Internet
The income curve. This is Pareto's 1909 diagram of how wealth is distributed through any human society, in any age or country. Rising income is on the vertical scale, population on the horizontal (latter-day economists have switched the coordinates). The number of people with income between levels $m$ and $p$ is represented by the shaded area. The mass of men fall to the broad bottom of the curve. The privileged few sit at the narrow top. While the bell curve is symmetric, the income curve is not.

Source: Internet
Figure 68

Source: Internet
### Figure 69

<table>
<thead>
<tr>
<th>FAMILY INCOME</th>
<th>TAX DECREASE</th>
<th>AVERAGE CHANGE IN TAXES</th>
<th>TAX DECREASE</th>
<th>AVERAGE CHANGE IN TAXES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above $2.87 million (top 0.1%)</td>
<td>-4.4%</td>
<td>-$269,364</td>
<td>+11.5%</td>
<td>+$701,885</td>
</tr>
<tr>
<td>$603,403 to $2.87 million (top 1%)</td>
<td>-3.4</td>
<td>-$45,361</td>
<td>+8.7</td>
<td>+$115,974</td>
</tr>
<tr>
<td>$226,982 to $603,402</td>
<td>-3.1</td>
<td>-7,871</td>
<td>0</td>
<td>-12</td>
</tr>
<tr>
<td>$160,973 to $226,981</td>
<td>-3</td>
<td>-4,380</td>
<td>-1.9</td>
<td>-2,789</td>
</tr>
<tr>
<td>$111,646 to $160,972</td>
<td>-2.5</td>
<td>-2,614</td>
<td>-2.1</td>
<td>-2,204</td>
</tr>
<tr>
<td>$66,355 to $111,645</td>
<td>-1.4</td>
<td>-1,009</td>
<td>-1.8</td>
<td>-1,290</td>
</tr>
<tr>
<td>$37,596 to $66,354</td>
<td>-0.7</td>
<td>-319</td>
<td>-2.4</td>
<td>-1,042</td>
</tr>
<tr>
<td>$18,982 to $37,595</td>
<td>-0.5</td>
<td>-$113</td>
<td>-3.6</td>
<td>-892</td>
</tr>
<tr>
<td>Up to $18,981</td>
<td>-0.2</td>
<td>-$19</td>
<td>-5.5</td>
<td>-567</td>
</tr>
<tr>
<td>Average cut:</td>
<td>-2%</td>
<td>-$1,195</td>
<td>-0.3%</td>
<td>-160</td>
</tr>
</tbody>
</table>

Source: Internet
Figure 70

DISTRIBUTION OF TAXPAYERS AND INCOME TAX
(1999 IRS Data on Federal Income Taxes)

Source: Internet
<table>
<thead>
<tr>
<th>1830s U.S.</th>
<th>1830s Francs</th>
<th>Ratio</th>
<th>1830s France</th>
<th>1830s Francs</th>
<th>Ratio</th>
<th>2000's U.S.</th>
<th>2000s US dollars</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Messenger</td>
<td>3,374</td>
<td>1</td>
<td>Minimum wage</td>
<td>13,100</td>
<td>1</td>
<td>NY-Area Clerk</td>
<td>35,000</td>
<td>3</td>
</tr>
<tr>
<td>Lowest-paid clerk</td>
<td>5,420</td>
<td>2</td>
<td>1.400</td>
<td>0.9</td>
<td>35,000</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Highest-paid clerk</td>
<td>8,672</td>
<td>2.6</td>
<td>3,400</td>
<td>2.3</td>
<td>170,000</td>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chief clerk</td>
<td>10,840</td>
<td>3.2</td>
<td>Secretary General</td>
<td>20,000</td>
<td>13</td>
<td>President</td>
<td>400,000</td>
<td>31</td>
</tr>
<tr>
<td>Secretary of State</td>
<td>32,520</td>
<td>9.6</td>
<td>Minister</td>
<td>80,000</td>
<td>53</td>
<td>Wall Street Managing Director</td>
<td>2,250,000</td>
<td>172</td>
</tr>
<tr>
<td>President</td>
<td>135,000</td>
<td>40</td>
<td>Goldman Sachs CEO Lloyd Blankfein's record 2007 haul</td>
<td>69,000,000</td>
<td>5,267</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Internet
The following graph illustrates the concentration of wealth in the U.S. by plotting the cumulative percentage of wealth against the cumulative population:

Source: Internet
If the distribution of wealth were graphed according to absolute percentages for each quintile it would look like this:

The beginning of the red arrow in both graphs dips below zero. This indicates that those in the bottom quintile have negative wealth, on average. Hopefully these graphs illustrate that while the upper fifth of the population in America may make an impressive percentage of total income, it controls an intimidating percentage of the wealth, with nearly half of its wealth concentrated in the top one percent.

Source: Internet
HAPPINESS INDEX
Figure 74

Source: Internet
### Figure 75

<table>
<thead>
<tr>
<th>Country</th>
<th>Economic</th>
<th>Personal</th>
<th>Technological</th>
<th>Social</th>
<th>Political</th>
</tr>
</thead>
<tbody>
<tr>
<td>Singapore</td>
<td>1</td>
<td>9</td>
<td>11</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>Switzerland</td>
<td>0</td>
<td>9</td>
<td>11</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>United States</td>
<td>0</td>
<td>9</td>
<td>11</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>Netherlands</td>
<td>0</td>
<td>9</td>
<td>11</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>Canada</td>
<td>0</td>
<td>9</td>
<td>11</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>Denmark</td>
<td>0</td>
<td>9</td>
<td>11</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>Sweden</td>
<td>0</td>
<td>9</td>
<td>11</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>Austria</td>
<td>0</td>
<td>9</td>
<td>11</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>Finland</td>
<td>0</td>
<td>9</td>
<td>11</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>New Zealand</td>
<td>0</td>
<td>9</td>
<td>11</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>0</td>
<td>9</td>
<td>11</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>Australia</td>
<td>0</td>
<td>9</td>
<td>11</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>Norway</td>
<td>0</td>
<td>9</td>
<td>11</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>0</td>
<td>9</td>
<td>11</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>Croatia</td>
<td>0</td>
<td>9</td>
<td>11</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>Israel</td>
<td>0</td>
<td>9</td>
<td>11</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>France</td>
<td>0</td>
<td>9</td>
<td>11</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>Malaysia</td>
<td>0</td>
<td>9</td>
<td>11</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>Slovenia</td>
<td>0</td>
<td>9</td>
<td>11</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>Germany</td>
<td>0</td>
<td>9</td>
<td>11</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>Hungary</td>
<td>0</td>
<td>9</td>
<td>11</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>Pacific</td>
<td>0</td>
<td>9</td>
<td>11</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>Slovenia</td>
<td>0</td>
<td>9</td>
<td>11</td>
<td>32</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: Internet
Figure 76

AMERICANS WHO SAY THEY HAVE COMPLETE OR A GREAT DEAL OF FREEDOM ARE: 36%

AMERICANS WHO SAY THEY HAVE A MODERATE AMOUNT OF FREEDOM OR LESS ARE: 59%

Source: General Social Survey, 2000

Source: Internet
Figure 77

Gallup-Healthways Happiness-Stress Index

By hours of social time per day

- % With a lot of enjoyment/happiness without a lot of stress/worry
- % With a lot of stress/worry without a lot of enjoyment/happiness

Jan. 1 - May 23, 2008

Gallup Poll

Source: Internet
Gallup-Healthways Daily Happiness-Stress Index

- % With a lot of happiness/enjoyment without a lot of stress/worry
- % With a lot of stress/worry without a lot of enjoyment/happiness


Source: Internet
Figure 79

Gallup-Healthways Daily Happiness-Stress Index

By day of the week

- % With a lot of enjoyment/happiness without a lot of stress/worry
- % With a lot of stress/worry without a lot of enjoyment/happiness


GALLUP POLL

Source: Internet
Figure 80

Ratio of Happiness to Stress in the United States

By social time (hours per day) and job status

- Employed full time
- Not employed full time


GALLUP POLL

Source: Internet
Figure 81

Source: Internet
Figure 5. Subjective well-being and democratic institutions.
Vertical axis is the sum of the Freedom House ratings for Civil Liberties and Political Rights, from 1981 through 1996. Since these ratings give high scores for low levels of democracy, we reversed polarity by subtracting these sums from 235 (China, which had the maximum score of 235, has a score of 1 after this transformation). Horizontal axis reflects each public's mean factor score on happiness and overall life satisfaction and subjective well-being.

n = 78, N = 62, p = .0000
Source: Freedom House surveys reported in successive editions of *Freedom in the World*.
Figure 83

Figure 1: Life satisfaction and happiness index, by country

Question 29: All things considered, how satisfied would you say you are with your life these days? Scale from 1 (‘very dissatisfied’) to 10 (‘very satisfied’). Question 42: Taking all things together, how happy would you say you are, on a scale from 1 to 10 where [1] means you are ‘very unhappy’ and [10] means you are ‘very happy’. Source: EQLS 2007 for all figures in this report.

Figure 2: Mean life satisfaction, by income quartile

Question 29: All things considered, how satisfied would you say you are with your life these days, on a scale from 1 (‘very dissatisfied’) to 10 (‘very satisfied’).
Figure 84

Growth in Life Satisfaction and GDP in Europe

Life Satisfaction: Ordered probit index
Deviation from country average

Real GDP per capita, PPP (2000 $ US; Log scale)


Source: Internet
Index of Happiness, 1995-2005: Happy Life Years


Source: Internet
Figure 86

2008 Trend in Ratings of Current U.S. Economic Conditions

GALLUP POLL

Source: Internet
Figure 87

Relationship between GDP/capita and the Happiness Index in Eastern Mediterranean Countries, 2007

Legend
- Happiness Index in EM countries:
  - 121 - 170
  - 171 - 200
  - 201 - 240
  - 241 - 247

- GDP/(US$) capita in EM countries:
  - 671 - 3610
  - 361 - 7536
  - 7536 - 15269
  - 15269 - 24096

Source: Internet
Figure 88

Source: Internet
Figure 89

Source: Internet
Figure 90

Source: Internet
Figure 91

Figure 4
Income and happiness in the USA

Source: Internet
Figure 92

Source: Internet
As intelligence goes up, happiness goes down. See, I made a graph. I make lots of graphs.

Source: Internet
Figure 94

NYMEX Crude Oil Futures
Close (Front Month)


Source: Internet
Figure 95

Source: Internet
Figure 96

Trends in Happiness Inequality Within Groups

Source: Internet
Figure 97

Map of suicide rates
(per 100,000; most recent year available as of March 2002)

Source: Internet
Figure 98

A Global Projection of Subjective Well-being: The First Published Map of World Happiness

Map created by Adrian White, Analytic Social Psychologist, University of Leicester (2005)

This map and further analysis incorporate data published by UNESCO, the WHO, the New Economics Foundation, the Well-being Database, the Calesthenics, the Hansard, the CIA, and the UN Human Development Report.

Source: Internet
Figure 99

Source: Internet
HUMAN DEVELOPMENT INDICES
Figure 100

Source: Internet
Source: Internet

**Figure 2a.**
GNP per capita (1993) and human development index (1990)

---

**Figure 101**
Figure 102


Source: Internet
Figure 103

Human Development Index by Country

Source: Internet
Figure 104

Gender Inequality Levels

Sri Lanka
Pakistan
Nepal
Maldives
India
China
Bhutan
Bangladesh

Source: Internet
Figure 105

Source: Internet
Figure 106

Figure 5.1
Human Development Index and GDP Per Capita

Ranking by GDP per capita (PPP$)

Human Development Index


Source: Internet
Figure 107

Source: Internet
Figure 108

Source: Internet
Figure 109

Source: Internet
The graph below compares a country’s ranking on the human development index with its ranking on average income. The correlation between the two is even stronger — a massive 95 percent! For all but a handful of countries, your ranking on average income is the same as your ranking on this multi-dimensional index.

Source: Internet
Figure 111

As a comparison... Human Development Index (HDI) in 2002

The Human Development Index (HDI) is calculated using three variables: life expectancy, education level and income.

Source: Internet
Figure 112

Source: Internet
Figure 113

Population groups, by country

Source: Internet
POVERTY
Figure 114

Source: Internet
Figure 115

Primary school attendance in India by state and territory, 2006

Source: Internet
Figure 116

Persistently below 50% of median income

Source: European Community Household Panel Survey; the data is most for 2000 or 2001 depending on the country

Source: Internet
Figure 117

Poverty by education

Adults 25+

Source: Internet
Poverty: 1959 to 1998

Number of poor still exceeds 1989 level but poverty rate does not


Source: Internet
Figure 119

Source: Internet
Figure 120

Child Poverty
2000-2004

Source: Internet
### Figure 121

<table>
<thead>
<tr>
<th>Indicator</th>
<th>1990</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poverty rate, % of population</td>
<td>44%</td>
<td>25%</td>
</tr>
<tr>
<td>Number of people living in poverty, millions</td>
<td>508</td>
<td>320</td>
</tr>
<tr>
<td>% of population undernourished</td>
<td>16%</td>
<td>11%</td>
</tr>
<tr>
<td>% of rural population with improved sanitation</td>
<td>23%</td>
<td>44%</td>
</tr>
<tr>
<td>Per capita daily protein consumption, rural (grams)</td>
<td>61.7</td>
<td>71.1</td>
</tr>
<tr>
<td>Health personnel per 10,000 people</td>
<td>44.8</td>
<td>74.0</td>
</tr>
<tr>
<td>Per capita living space, rural (sq. m)</td>
<td>17.2</td>
<td>26.5</td>
</tr>
<tr>
<td>% of students continuing on to middle school</td>
<td>72%</td>
<td>97%</td>
</tr>
<tr>
<td>Refrigerators per 100 urban households</td>
<td>42.3</td>
<td>87.4</td>
</tr>
</tbody>
</table>

Source: Internet
Figure 122

Source: Internet
Figure 123

Headcount poverty rates vary widely

Percentage

Rural Orissa  |  43
Rural Bihar  |  41
Ghana        |  28
Malawi       |  27
Mexico       |  7
Rural Haryana|  6
Rural Punjab |  2

Source: Internet
Figure 124

Source: Internet
Figure 125

Canadian Residents Aged 16 to 64 Who Were Poor at Least One Year from 1993 to 1996

Notes: "Poor" is defined as being below Statistics Canada's 1992-base Low Income Cut-offs. A "High-Risk Person" is a lone parent, a person with a disability or an immigrant who came to Canada after 1977.

Source: Survey of Labour and Income Dynamics
Source: Internet
Figure 126

Community Poverty Level

Source: Internet
Table 6. Percent of Poor Householders and Partners in Coupled Families by Race, Ethnicity, Region, and Metropolitan Status.

<table>
<thead>
<tr>
<th></th>
<th>Married Different-Sex</th>
<th>Male Couples</th>
<th>Female Couples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ALL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Householder &amp; Partner</td>
<td>5.4</td>
<td>4.0*</td>
<td>6.8*</td>
</tr>
<tr>
<td><strong>RACE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>4.1</td>
<td>2.7*</td>
<td>4.3</td>
</tr>
<tr>
<td>Black</td>
<td>9.3</td>
<td>14.4*</td>
<td>21.1*</td>
</tr>
<tr>
<td>Native American/Alaskan</td>
<td>12.9</td>
<td>19.1</td>
<td>13.7</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>9.1</td>
<td>4.5*</td>
<td>11.8</td>
</tr>
<tr>
<td>Other Race</td>
<td>16.4</td>
<td>8.0*</td>
<td>17.0</td>
</tr>
<tr>
<td><strong>ETHNICITY</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>16.7</td>
<td>9.2*</td>
<td>19.1</td>
</tr>
<tr>
<td>Non-Hispanic</td>
<td>4.2</td>
<td>3.4*</td>
<td>5.7</td>
</tr>
<tr>
<td><strong>REGION</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New England</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
</tr>
<tr>
<td>Mid Atlantic</td>
<td>5.0</td>
<td>4.0*</td>
<td>8.9*</td>
</tr>
<tr>
<td>East North Central</td>
<td>3.6</td>
<td>4.2</td>
<td>6.6*</td>
</tr>
<tr>
<td>West North Central</td>
<td>3.9</td>
<td>4.0</td>
<td>5.8*</td>
</tr>
<tr>
<td>South Atlantic</td>
<td>5.1</td>
<td>3.3*</td>
<td>6.2*</td>
</tr>
<tr>
<td>East South Central</td>
<td>6.9</td>
<td>7.9</td>
<td>15.3*</td>
</tr>
<tr>
<td>West South Central</td>
<td>8.1</td>
<td>5.4*</td>
<td>8.8</td>
</tr>
<tr>
<td>Mountain</td>
<td>5.7</td>
<td>3.6*</td>
<td>6.8</td>
</tr>
<tr>
<td>Pacific</td>
<td>7.2</td>
<td>3.9*</td>
<td>6.1*</td>
</tr>
<tr>
<td><strong>METROPOLITAN STATUS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Big Metro</td>
<td>5.1</td>
<td>3.3*</td>
<td>6.0*</td>
</tr>
<tr>
<td>Med Metro</td>
<td>5.0</td>
<td>4.4</td>
<td>7.3*</td>
</tr>
<tr>
<td>Small Metro</td>
<td>5.3</td>
<td>6.2</td>
<td>7.9*</td>
</tr>
<tr>
<td>Non Metro</td>
<td>6.9</td>
<td>8.6</td>
<td>11.6*</td>
</tr>
</tbody>
</table>

Source: Authors’ tabulations from 5% Public Use Microdata Sample (PUMS) Files of U.S. Decennial Census, 2000.

* Difference from heterosexual married couples is statistically significant at the 5% level.
Figure 129

EXTREME POVERTY: WHERE WE STAND

The number of people mired in the lowest depths of poverty has shrunk since the early 1980s, as the global economy has grown stronger. But these gains were concentrated in East Asia, leaving behind more than a billion unfortunate in sub-Saharan Africa, Central Asia, and the mountainous parts of Central America and the Andean region. A determined push to help those lagging populations during the coming decade could cut the ranks of poor in half. The numbers below indicate millions of people.

<table>
<thead>
<tr>
<th>Year</th>
<th>Poverty</th>
<th>East Asia and the Pacific</th>
<th>South Asia</th>
<th>Sub-Saharan Africa</th>
<th>Europe and Central Asia</th>
<th>Latin America and the Caribbean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981</td>
<td>1.5 Billion Poor</td>
<td>475 million</td>
<td>164 million</td>
<td>36 million</td>
<td>9 million</td>
<td>3 million</td>
</tr>
<tr>
<td></td>
<td>Greater than half those living in extreme poverty were in East Asia and over a quarter in South Asia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1990</td>
<td>1.2 Billion Poor</td>
<td>462 million</td>
<td>227 million</td>
<td>49 million</td>
<td>6 million</td>
<td>2 million</td>
</tr>
<tr>
<td></td>
<td>The number of extremely poor people in East Asia shrank by 278 million. Had poverty rates there not fallen, population growth would have added 265 million to the ranks of the severely poor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>1.1 Billion Poor</td>
<td>431 million</td>
<td>313 million</td>
<td>50 million</td>
<td>7 million</td>
<td>17 million</td>
</tr>
<tr>
<td></td>
<td>Some 129 million fewer people were living in extreme poverty than in 1990. But the numbers of the extreme poor in sub-Saharan Africa rose to 313 million—one third of the global total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>0.7 Billion Poor</td>
<td>198 million</td>
<td>90 million</td>
<td>49 million</td>
<td>4 million</td>
<td>49 million</td>
</tr>
<tr>
<td></td>
<td>Achieving the Millennium Development Goals will mean that by 2015 more than 500 million people will be lifted out of extreme poverty as compared with 1990 and that millions of lives will be saved</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Internet
Figure 130

Source: Internet
Figure 131

Source: Internet
Figure 132

Weighted Average Poverty Thresholds by Size of Family Unit

Source: Internet
Figure 133

Poverty and education

Statistics showing the connection between formal education and poverty lead to an obvious conclusion: The more education you have, the less likely you are to be poor. Statistics are based on the 1998 Oregon population survey.

Source: Internet
Figure 134
Percent living below Federal Poverty Level by race/ethnicity, King County (2005)

- White alone: 7.3%
- African American alone: 23.5%
- Asian alone: 8.3%
- Native Hawaiian/Other PI alone: ^
- American Indian/AN alone: ^
- Other Race alone: 24.2%
- Multiracial: 14.7%
- Hispanic/Latino: 22.4%

^ Too few cases to meet confidentiality standard
Source: Internet
Figure 135

Note: The data points are placed at the midpoints of the respective years. Data for people 18 to 64 and 65 and older are not available from 1960 to 1965.


The administrations were identified (and red & blue lines used to separate them) by Ray Dubuque

Source: Internet
Figure 136

Poverty Rates, By Region

Source: Internet
Figure 137

Poverty rates by race/ethnicity

Source: http://www.census.gov/hhes/poverty/histpov

Source: Internet
Figure 138

PALS-K Fall Assessment, By Region

Source: Internet
Measuring the nation's mood

In the nearly 30 years that Gallup has measured people's satisfaction, the nation's mood has fluctuated from a low of 12% in July 1979 (high inflation, Iran hostages) to a high of 71% in February 1999 (runaway stock market, booming economy). How people answered the question "In general, are you satisfied or dissatisfied with the way things are going in the USA at this time?" (polls taken in October or the nearest date to October each year).

Notice how the Bush's can satisfy a majority of US citizens.

The political distinctions were added by the caretaker of the website on Nov. 1, 2007.

Sources: Gallup Polls and USA TODAY/Gallup Polls of more than 1,000 people. Margin of error: ±3 percentage points; Aggregate of seven polls conducted by Gallup since May 1. Margin of error: ±3 to 6 percentage points; USA TODAY/Gallup Poll of 1,009 adults taken Oct. 12-14. Margin of error: ±3 percentage points (except where noted).
Figure 140

WHERE BRITAIN’S RICH AND POOR LIVE

Source: Internet
TERRORISM
Figure 141

Source: Internet
Figure 142

Source: Internet
Figure 143

Terrorism Events Between 1981-2000

Source: Internet
Figure 144

How worried are you that you or someone in your family will become a victim of terrorism?

Trend since Sept. 11, 2001

<table>
<thead>
<tr>
<th>Year</th>
<th>% Very/Somewhat worried</th>
<th>% Not too/Not at all worried</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 2002</td>
<td>59</td>
<td>41</td>
</tr>
<tr>
<td>Jan 2003</td>
<td>60</td>
<td>38</td>
</tr>
<tr>
<td>Jan 2004</td>
<td>62</td>
<td>38</td>
</tr>
<tr>
<td>Jan 2005</td>
<td>62</td>
<td>38</td>
</tr>
<tr>
<td>Jan 2006</td>
<td>52</td>
<td>47</td>
</tr>
<tr>
<td>Jan 2007</td>
<td>47</td>
<td>52</td>
</tr>
<tr>
<td>Jan 2008</td>
<td>38</td>
<td>62</td>
</tr>
</tbody>
</table>

Source: Internet
Figure 145

Source: Internet
Figure 147

Source: Internet

For an updated map, click on this graphic.
Rate the impact of additional U.S. troops in Baghdad.

Source: Internet
Figure 149

Deaths by Region (filtered)

Source: Internet